Fig.1.

Sequence ID 1

```
1   TGCG AGG GGT GCA AGG AGT TCT TCA GGC GGA GTG TAA CCA AAA ATG
    ACGC TCC CCA CGT TCC TCA AGA AGT CCG CCT CAC ATT GGT TTT TAC

46  CAG TGT ACA TAT GCA AAT TCG GCC ATG CTT GCG AAA TGG ATA TGT
    GTC ACA TGT ATA CGT TTA AGC CGG TAC GAA CGC TTT ACC TAT ACA

91  ATA TGC GGA GAA AAT GCC AAG AGT A
    TAT ACG CCT CTT TTA CGG TTC TCA T
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Sequence ID 2

Fig.2.

```
                3         9        15        21        27        33        39        45
                |         |         |         |         |         |         |         |
  1 TCC ACT GGT GTT TTC ACC ACC ACA GAA AAG GCC TCT GCT CAT TTA
    AGG TGA CCA CAA AAG TGG TGG TGT CTT TTC CGG AGA CGA GTA AAT

 46 GAG GGT GGT GCT AAG AAG GTC ATC ATC TCC TGC TGC CCA GCG CTG
    CTC CCA CCA CGA TTC TTC CAG TAG TAG AGG ACG ACG GGT CGC GAC

 91 ACC CAT GTT CGT CGT TGG TGT CAA CCT TGA AGC AGT ATG ACC CCT
    TGG GTA CAA GCA GCA ACC ACA GTT GGA ACT TCG TCA TAC TGG GGA

136 CTT ACA AGG TCA TCT CCA ACG CCT CCT GCA CAA CCA ACT GCC TCG
    GAA TGT TCC AGT AGA GGT TGC GGA GGA CGT GTT GGT TGA CGG AGC

181 CTC CTC TCG CTA AGG TCA TCC ATG ACA ACT TCG AGA TCA TTG AAG
    GAG GAG AGC GAT TCC AGT AGG TAC TGT TGA AGC TCT AGT AAC TTC

226 GTC TGA TGA CCA CTG TAC ACG CCA CCA CTG CCA CCC AGA AGA CAG
    CAG ACT ACT GGT GAC ATG TGC GGT GGT GAC GGT GGG TCT TCT GTC

271 TGG ATG GAC CCT CTG GTA AAC TGT GGC GTG ATG GCC GTG GTG CTC
    ACC TAC CTG GGA GAC CAT TTG ACA CCG CAC TAC CGG CAC CAC GAG

316 AGC AGA ATA TCA TTC CCG CGG AAT TCC CCA GCC GCA GCT AGC TAA
    TCG TCT TAT AGT AAG GGC GCC TTA AGG GGT CGG CGT CGA TCG ATT
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.2 i.

```
361 CCT GCA GCA GAC ACA ACC CCT ACC TTC CAT GCC GTT ACC AAT GCC
    GGA CGT CGT CTG TGT TGG GGA TGG AAG GTA CGG CAA TGG TTA CGG

406 ACC GAC AAC ACC CAA ATC AGA AAA CGA GTC AAT GTC ATC AGG TCG
    TGG CTG TTG TGG GTT TAG TCT TTT GCT CAG TTA CAG TAG TCC AGC

451 TGA GGA ACT GTC TCC AGC TTC GAG TGT AAA CGG CTG CAG CAC AGA
    ACT CCT TGA CAG AGG TCG AAG CTC ACA TTT GCC GAC GTC GTG TCT

496 TGG CGA GGC GAG GCG GCA GAA GAA AGG CCC AGC GCC GAG GCA GCA
    ACC GCT CCG CTC CGC CGT CTT CTT TCC GGG TCG CGG CTC CGT CGT

541 AGA AGA GCT ATG TCT TGT CTG CGG CGA CAG AGC CTC CGG ATA TCA
    TCT TCT CGA TAC AGA ACA GAC GCC GCT GTC TCG GAG GCC TAT AGT

586 CTA CAA CGC GCT CAC ATG TGA AGG GTG TAA AGG TTT CTT CAG GCG
    GAT GTT GCG CGA GTG TAC ACT TCC CAC ATT TCC AAA GAA GTC CGC

631 GAG TGT AAC CAA AAA TGC AGT GTA CAT ATG CAA ATT CGG CCA TGC
    CTC ACA TTG GTT TTT ACG TCA CAT GTA TAC GTT TAA GCC GGT ACG

676 TTG CGA AAT GGA TAT CTA TAT GCG GAG AAA ATG TCA GGA GTG TCG
    AAC GCT TTA CCT ATA GAT ATA CGC CTC TTT TAC AGT CCT CAC AGC

721 GTT GAA GAA ATG TCT TGC GGT GGG CAT GAG GCC CGA GTG CGT GGT
    CAA CTT CTT TAC AGA ACG CCA CCC GTA CTC CGG GCT CAC GCA CCA

766 GCC GGA GAA CCA GTG TGC AAT GAA ACG GAA AGA GAA AAA GGC GCA
    CGG CCT CTT GGT CAC ACG TTA CTT TGC CTT TCT CTT TTT CCG CGT
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.2 ii.

```
811 GAG GGA AAA AGA CAA ATT GCC CGT CAG TAC GAC GAC AGT AGA CGA
    CTC CCT TTT TCT GTT TAA CGG GCA GTC ATG CTG CTG TCA TCT GCT

856 TCA CAT GCC TCC CAT CAT GCA ATG TGA CCC TCC GCC CCC AGA GGC
    AGT GTA CGG AGG GTA GTA CGT TAC ACT GGG AGG CGG GGG TCT CCG

901 CGC TAG AAT TCT GGA ATG TGT GCA GCA CGA GGT GGT GCC ACG ATT
    GCG ATC TTA AGA CCT TAC ACA CGT CGT GCT CCA CCA CGG TGC TAA

946 CCT GAA TGA GAA GCT AAT GGA ACA GAA CAG ATT GAA GAA CGT GCC
    GGA CTT ACT CTT CGA TTA CCT TGT CTT GTC TAA CTT CTT GCA CGG

991 CCC CCT CAC TGC CAA TCA GAA GTC GTT GAT CGC AAG GCT CGT GTG
    GGG GGA GTG ACG GTT AGT CTT CAG CAA CTA GCG TTC CGA GCA CAC

1036 GTA CCA GGA AGG CTA TGA ACA ACC TTC CGA GGA AGA CCT GAA GAG
     CAT GGT CCT TCC GAT ACT TGT TGG AAG GCT CCT TCT GGA CTT CTC

1081 GGT TAC ACA GTC GGA CGA GGA CGA CGA AGA CTC GGA TAT GCC GTT
     CCA ATG TGT CAG CCT GCT CCT GCT GCT TCT GAG CCT ATA CGG CAA

1126 CCG TCA GAT TAC CGA GAT GAC GAT TCT CAC AGT GCA GCT CAT CGT
     GGC AGT CTA ATG GCT CTA CTG CTA AGA GTG TCA CGT CGA GTA GCA

1171 AGA ATT CGC TAA GGG CCT CCC GGG CTT CGC CAA GAT CTC GCA GTC
     TCT TAA GCG ATT CCC GGA GGG CCC GAA GCG GTT CTA GAG CGT CAG

1216 GGA CCA GAT CAC GTT ATT AAA GGC GTG CTC AAG TGA GGT GAT GAT
     CCT GGT CTA GTG CAA TAA TTT CCG CAC GAG TTC ACT CCA CTA CTA

1261 GCT CCG AGT GGC TCG GCG GTA TGA CGC GGC CAC CGA CAG CGT ACT
     CGA GGC TCA CCG AGC CGC CAT ACT GCG CCG GTG GCT GTC GCA TGA
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.2 iii.

```
1306 GTT CGC GAA CAA CCA GGC GTA CAC TCG CGA CAA CTA CCG CAA GGC
     CAA GCG CTT GTT GGT CCG CAT GTG AGC GCT GTT GAT GGC GTT CCG

1351 AGG CAT GGC GTA CGT CAT CGA GGA CCT GCT GCA CTT CTG TCG GTG
     TCC GTA CCG CAT GCA GTA GCT CCT GGA CGA CGT GAA GAC AGC CAC

1396 CAT GTA CTC CAT GAT GAT GGA TAA CGT GCA TTA TGC GCT GCT TAC
     GTA CAT GAG GTA CTA CTA CCT ATT GCA CGT AAT ACG CGA CGA ATG

1441 AGC CAT TGT CAT CTT CTC AGA CCG GCC CGG GCT TGA GCA ACC CCT
     TCG GTA ACA GTA GAA GAG TCT GGC CGG GCC CGA ACT CGT TGG GGA

1486 GTT GGT GGA GGA CAT CCA GAG ATA TTA CCT GAA CAC GCT ACG GGT
     CAA CCA CCT CCT GTA GGT CTC TAT AAT GGA CTT GTG CGA TGC CCA

1531 GTA CAT CCT GAA CCA GAA CAG CGC GTC GCC CCG CGG CGC CGT CAT
     CAT GTA GGA CTT GGT CTT GTC GCG CAG CGG GGC GCC GCG GCA GTA

1576 CTT CGG CGA GAT CCT GGG CAT ACT GAC GGA GAT CCG CAC GCT GGG
     GAA GCC GCT CTA GGA CCC GTA TGA CTG CCT CTA GGC GTG CGA CCC

1621 CAT GCA GAA CTC CAA CAT GTG CAT CTC CCT CAA GCT GAA GAA CAG
     GTA CGT CTT GAG GTT GTA CAC GTA GAG GGA GTT CGA CTT CTT GTC

1666 GAA GCT GCC GCC GTT CCT CGA GGA GAT CTG GGA CGT GGC GGA CGT
     CTT CGA CGG CGG CAA GGA GCT CCT CTA GAC CCT GCA CCG CCT GCA

1711 GGC GAC GAC GGC GAC GCC GGT GGC GGC GGA GGC GCC GGC GCC TCT
     CCG CTG CTG CCG CTG CGG CCA CCG CCG CCT CCG CGG CCG CGG AGA
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.2 iv.

```
1756 AGC CCC CGC CCC GCC CGC CCG GCC GCC CGC CAC CGT CTA GCG CGC
     TCG GGG GCG GGG CGG GCG GGC CGG CGG GCG GTG GCA GAT CGC GCG

1801 CTC AGG AGA GAA CGC TCA TAG ACT GGC TAG TTT TAG TGA AGT GCA
     GAG TCC TCT CTT GCG AGT ATC TGA CCG ATC AAA ATC ACT TCA CGT

1846 CGG ACA CTG ACG TCG ACG TGA TCA ACC TAT TTA TAA GGA CTG CGA
     GCC TGT GAC TGC AGC TGC ACT AGT TGG ATA AAT ATT CCT GAC GCT

1891 ATT TTA CCA CTT AAG AGG GCA CAC CCG TAC CCG ATT TCG TAC GG
     TAA AAT GGT GAA TTC TCC CGT GTG GGC ATG GGC TAA AGC ATG CC
```

Total number of bases is: 1934.

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3.

The sequence shown below is that of pSK16.1

Sequence ID3

```
          3         9        15        21        27        33        39        45
          |         |         |         |         |         |         |         |
    1 CGC TGG TAT AAC AAC GGA CCA TTC CAG ACG CTG CGA ATG CTC GAG
      GCG ACC ATA TTG TTG CCT GGT AAG GTC TGC GAC GCT TAC GAG CTC

   46 GAG AGC TCG TCT GAG GTG ACG TCG TCT TCA GCA CTG GGC CTG CCG
      CTC TCG AGC AGA CTC CAC TGC AGC AGA AGT CGT GAC CCG GAC GGC

   91 CCG GCT ATG GTG ATG TCC CCG GAA TCG CTC GCG TCG CCC GAG ATC
      GGC CGA TAC CAC TAC AGG GGC CTT AGC GAG CGC AGC GGG CTC TAG

  136 GGC GGC CTG GAG CTG TGG GGC TAC GAC GAT GGC ATC ACT TAC AGC
      CCG CCG GAC CTC GAC ACC CCG ATG CTG CTA CCG TAG TGA ATG TCG

  181 ATG GCA CAG TCG CTG GGC ACC TGC ACC ATG GAG CAG CAG CAG CCC
      TAC CGT GTC AGC GAC CCG TGG ACG TGG TAC CTC GTC GTC GTC GGG
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3 i.

```
226 CAG CCG CAG CAG CAG CCG CAG CAG ACA CAA CCC CTA CCT TCC ATG
    GTC GGC GTC GTC GTC GGC GTC GTC TGT GTT GGG GAT GGA AGG TAC

271 CCG TTA CCA ATG CCA CCG ACA ACA CCC AAA TCA GAA AAC GAG TCA
    GGC AAT GGT TAC GGT GGC TGT TGT GGG TTT AGT CTT TTG CTC AGT

316 ATG TCA TCA GGT CGT GAG GAA CTG TCT CCA GCT TCG AGT GTA AAC
    TAC AGT AGT CCA GCA CTC CTT GAC AGA GGT CGA AGC TCA CAT TTG

361 GGC TGC AGC ACA GAT GGC GAG GCG AGG CGG CAG AAG AAA GGC CCA
    CCG ACG TCG TGT CTA CCG CTC CGC TCC GCC GTC TTC TTT CCG GGT

406 GCG CCG AGG CAG CAA GAA GAG CTA TGT CTT GTC TGC GGC GAC AGA
    CGC GGC TCC GTC GTT CTT CTC GAT ACA GAA CAG ACG CCG CTG TCT

451 GCC TCC GGA TAT CAC TAC AAC GCG CTC ACA TGT GAA GGG TGT AAA
    CGG AGG CCT ATA GTG ATG TTG CGC GAG TGT ACA CTT CCC ACA TTT

496 GGT TTC TTC AGG CGG AGT GTA ACC AAA AAT GCA GTG TAC ATA TGC
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3 ii.

```
    CCA AAG AAG TCC GCC TCA CAT TGG TTT TTA CGT CAC ATG TAT ACG

541 AAA TTC GGC CAT GCT TGC GAA ATG GAT ATC TAT ATG CGG AGA AAA
    TTT AAG CCG GTA CGA ACG CTT TAC CTA TAG ATA TAC GCC TCT TTT

586 TGT CAG GAG TGT CGG TTG AAG AAA TGT CTT GCG GTG GGC ATG AGG
    ACA GTC CTC ACA GCC AAC TTC TTT ACA GAA CGC CAC CCG TAC TCC

631 CCC GAG TGC GTG GTG CCG GAG AAC CAG TGT GCA ATG AAA CGG AAA
    GGG CTC ACG CAC CAC GGC CTC TTG GTC ACA CGT TAC TTT GCC TTT

676 GAG AAA AAG GCG CAG AGG GAA AAA GAC AAA TTG CCC GTC AGT ACG
    CTC TTT TTC CGC GTC TCC CTT TTT CTG TTT AAC GGG CAG TCA TGC

721 ACG ACA GTA GAC GAT CAC ATG CCT CCC ATC ATG CAA TGT GAC CCT
    TGC TGT CAT CTG CTA GTG TAC GGA GGG TAG TAC GTT ACA CTG GGA

766 CCG CCC CCA GAG GCC GCT AGA ATT CTG GAA TGT GTG CAG CAC GAG
    GGC GGG GGT CTC CGG CGA TCT TAA GAC CTT ACA CAC GTC GTG CTC

811 GTG GTG CCA CGA TTC CTG AAT GAG AAG CTA ATG GAA CAG AAC AGA
    CAC CAC GGT GCT AAG GAC TTA CTC TTC GAT TAC CTT GTC TTG TCT

856 TTG AAG AAC GTG CCC CCC CTC ACT GCC AAT CAG AAG TCG TTG ATC
    AAC TTC TTG CAC GGG GGG GAG TGA CGG TTA GTC TTC AGC AAC TAG

901 GCA AGG CTC GTG TGG TAC CAG GAA GGC TAT GAA CAA CCT TCC GAG
    CGT TCC GAG CAC ACC ATG GTC CTT CCG ATA CTT GTT GGA AGG CTC

946 GAA GAC CTG AAG AGG GTT ACA CAG TCG GAC GAG GAC GAC GAA GAC
    CTT CTG GAC TTC TCC CAA TGT GTC AGC CTG CTC CTG CTG CTT CTG
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3 iii.

```
991 TCG GAT ATG CCG TTC CGT CAG ATT ACC GAG ATG ACG ATT CTC ACA
    AGC CTA TAC GGC AAG GCA GTC TAA TGG CTC TAC TGC TAA GAG TGT

1036 GTG CAG CTC ATC GTA GAA TTC GCT AAG GGC CTC CCG GGC TTC GCC
     CAC GTC GAG TAG CAT CTT AAG CGA TTC CCG GAG GGC CCG AAG CGG

1081 AAG ATC TCG CAG TCG GAC CAG ATC ACG TTA TTA AAG GCG TGC TCA
     TTC TAG AGC GTC AGC CTG GTC TAG TGC AAT AAT TTC CGC ACG AGT

1126 AGT GAG GTG ATG ATG CTC CGA GTG GCT CGG CGG TAT GAC GCG GCC
     TCA CTC CAC TAC TAC GAG GCT CAC CGA GCC GCC ATA CTG CGC CGG

1171 ACC GAC AGC GTA CTG TTC GCG AAC AAC CAG GCG TAC ACT CGC GAC
     TGG CTG TCG CAT GAC AAG CGC TTG TTG GTC CGC ATG TGA GCG CTG

1216 AAC TAC CGC AAG GCA GGC ATG GCG TAC GTC ATC GAG GAC CTG CTG
     TTG ATG GCG TTC CGT CCG TAC CGC ATG CAG TAG CTC CTG GAC GAC

1261 CAC TTC TGT CGG TGC ATG TAC TCC ATG ATG ATG GAT AAC GTG CAT
     GTG AAG ACA GCC ACG TAC ATG AGG TAC TAC TAC CTA TTG CAC GTA

1306 TAT GCG CTG CTT ACA GCC ATT GTC ATC TTC TCA GAC CGG CCC GGG
     ATA CGC GAC GAA TGT CGG TAA CAG TAG AAG AGT CTG GCC GGG CCC

1351 CTT GAG CAA CCC CTG TTG GTG GAG GAC ATC CAG AGA TAT TAC CTG
     GAA CTC GTT GGG GAC AAC CAC CTC CTG TAG GTC TCT ATA ATG GAC

1396 AAC ACG CTA CGG GTG TAC ATC CTG AAC CAG AAC AGC GCG TCG CCC
     TTG TGC GAT GCC CAC ATG TAG GAC TTG GTC TTG TCG CGC AGC GGG

1441 CGC GGC GCC GTC ATC TTC GGC GAG ATC CTG GGC ATA CTG ACG GAG
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3 iv.

```
      GCG CCG CGG CAG TAG AAG CCG CTC TAG GAC CCG TAT GAC TGC CTC

1486  ATC CGC ACG CTG GGC ATG CAG AAC TCC AAC ATG TGC ATC TCC CTC
      TAG GCG TGC GAC CCG TAC GTC TTG AGG TTG TAC ACG TAG AGG GAG

1531  AAG CTG AAG AAC AGG AAG CTG CCG CCG TTC CTC GAG GAG ATC TGG
      TTC GAC TTC TTG TCC TTC GAC GGC GGC AAG GAG CTC CTC TAG ACC

1576  GAC GTG GCG GAC GTG GCG ACG ACG GCG ACG CCG GTG GCG GCG GAG
      CTG CAC CGC CTG CAC CGC TGC TGC CGC TGC GGC CAC CGC CGC CTC

1621  GCG CCG GCG CCT CTA GCC CCC GCC CCG CCC GCC CGG CCG CCC GCC
      CGC GGC CGC GGA GAT CGG GGG CGG GGC GGG CGG GCC GGC GGG CGG

1666  ACC GTC TAG CGC GCC TCA GGA GAG AAC GCT CAT AGA CTG GCT AGT
      TGG CAG ATC GCG CGG AGT CCT CTC TTG CGA GTA TCT GAC CGA TCA

1711  TTT AGT GAA GTG CAC GGA CAC TGA CGT CGA CGT GAT CAA CCT ATT
      AAA TCA CTT CAC GTG CCT GTG ACT GCA GCT GCA CTA GTT GGA TAA

1756  TAT AAG GAC TGC GAA TTT TAC CAC TTA AGA GGG CAC ACC CGT ACC
      ATA TTC CTG ACG CTT AAA ATG GTG AAT TCT CCC GTG TGG GCA TGG

1801  CGA TTT CGT ACG TAT TCG GTG ACC GAC GAC GAT GCA GAG CGT GTG
      GCT AAA GCA TGC ATA AGC CAC TGG CTG CTG CTA CGT CTC GCA CAC

1846  TAA TGT GAA TAT ATG TGT TGT TGA ACG ATT TGG AGA ATA TAT ATT
      ATT ACA CTT ATA TAC ACA ACA ACT TGC TAA ACC TCT TAT ATA TAA

1891  GGT GTT GCT GTT CGG GCC CGC ACG CCG TCG CCG GTC GGC GGC GAT
      CCA CAA CGA CAA GCC CGG GCG TGC GGC AGC GGC CAG CCG CCG CTA
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3 v.

```
1936 CGC GGC GCC CGC GGC TTC AGT TTT ATT TCG TTT ACG ACT GAG TTG
     GCG CCG CGG GCG CCG AAG TCA AAA TAA AGC AAA TGC TGA CTC AAC

1981 GTC ACT CGG ATA CGA CTG TAT GAT AAG ACT TCG TTC GAT AAG TAC
     CAG TGA GCC TAT GCT GAC ATA CTA TTC TGA AGC AAG CTA TTC ATG

2026 ACC TAC TAA ATT ACA CAT ACG TAC GTA GCT TAC GAG AGT TAT TAG
     TGG ATG ATT TAA TGT GTA TGC ATG CAT CGA ATG CTC TCA ATA ATC

2071 AGA CAA AGA ATA TAA GAA GAA GAT GTT TCT ATT GGG TGA AAA GTT
     TCT GTT TCT TAT ATT CTT CTT CTA CAA AGA TAA CCC ACT TTT CAA

2116 GAT AGT TAT GTT TAT TTA CCA AAA TTA ACA ATA ATA CGT TGA TTA
     CTA TCA ATA CAA ATA AAT GGT TTT AAT TGT TAT TAT GCA ACT AAT

2161 ACC TTT CGA GTA TAA TAT TGT GAT GAG TCG TCC GCT GTC CAC GTC
     TGG AAA GCT CAT ATT ATA ACA CTA CTC AGC AGG CGA CAG GTG CAG

2206 GCC GTC ACA TGT TTG TTT CTG ATG CAC ACG TGA GGN GCG TTA TCG
     CGG CAG TGT ACA AAC AAA GAC TAC GTG TGC ACT CCN CGC AAT AGC

2251 TGT TTC ATG GTT CCA TCG TCC TGT GCC CGC GAC CCT CGA CTA AAT
     ACA AAG TAC CAA GGT AGC AGG ACA CGG GCG CTG GGA GCT GAT TTA

2296 GAG TAA TTT AAT TTA TTG CTG TGA TTA CAT TTT AAT GTG TTG ATT
     CTC ATT AAA TTA AAT AAC GAC ACT AAT GTA AAA TTA CAC AAC TAA

2341 ATC TAC CAT AGG GTG ATA TAA GTG TGT CTT ATT ACA ATA CAA AGT
     TAG ATG GTA TCC CAC TAT ATT CAC ACA GAA TAA TGT TAT GTT TCA

2386 GTG TGT CGT CGA TAG CTT CCA CAC GAG CAA GCC TTT TGT TTA AGT
```

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.3 vi.

```
CAC ACA GCA GCT ATC GAA GGT GTG CTC GTT CGG AAA ACA AAT TCA

2431 GAT TTA CTG ACA TGG ACA CTC GAC CCG GAA CTT C
     CTA AAT GAC TGT ACC TGT GAG CTG GGC CTT GAA G
```

Total number of bases is: 2464.

Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.4.

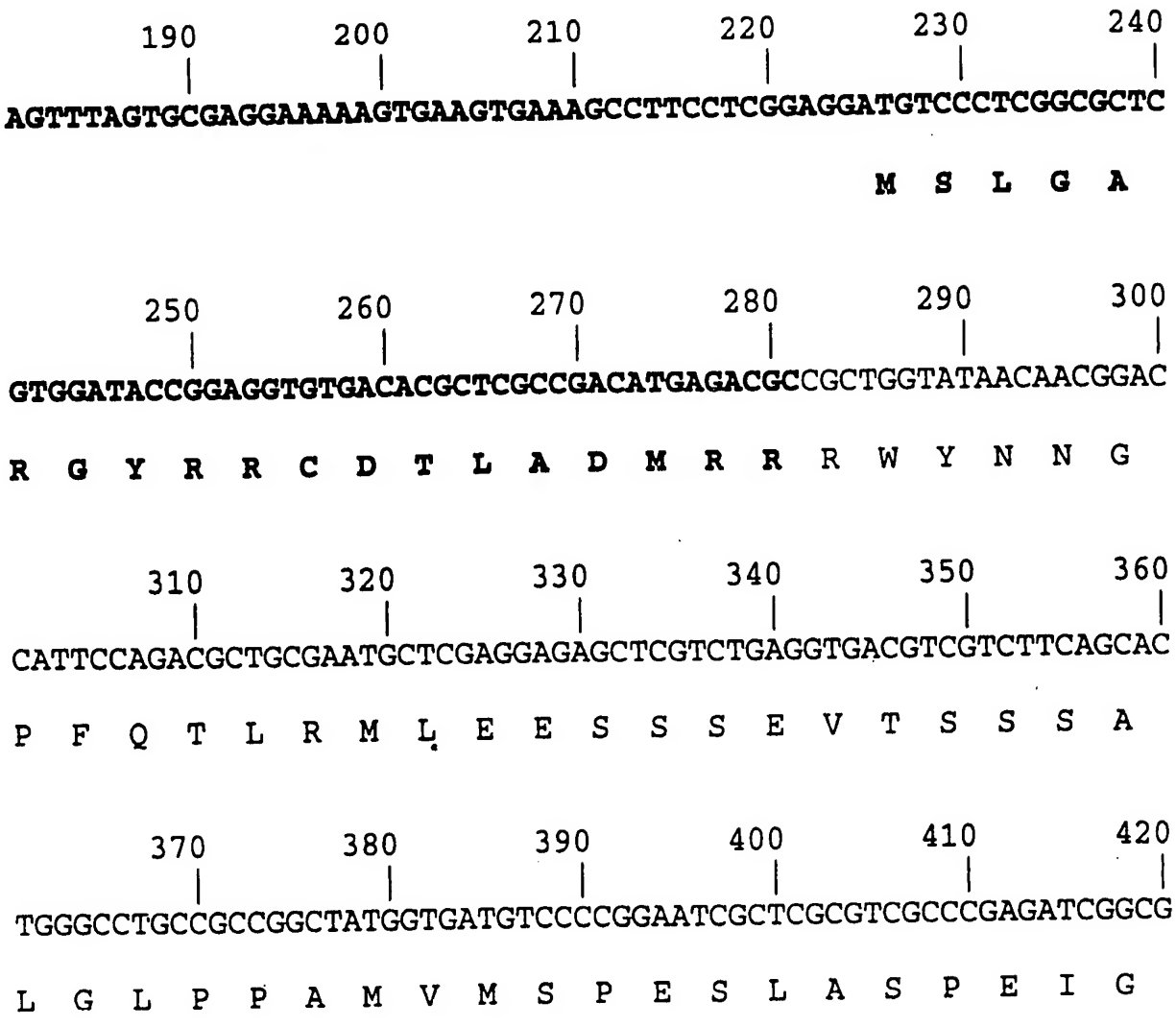
Sequence ID 4

```
          10         20         30         40         50         60
          |          |          |          |          |          |
ACTCGCGTGCTCTTCTCACCTGTTGCTCGGATTGTGTTGTACTAGAAAAAAGTTGTCGCC

          70         80         90         100        110        120
          |          |          |          |          |          |
GCTCGAACGAGACTTCCGAGTCCTATTGGATTGCACGAAAGTCGAGACAGTGGATAGCGA

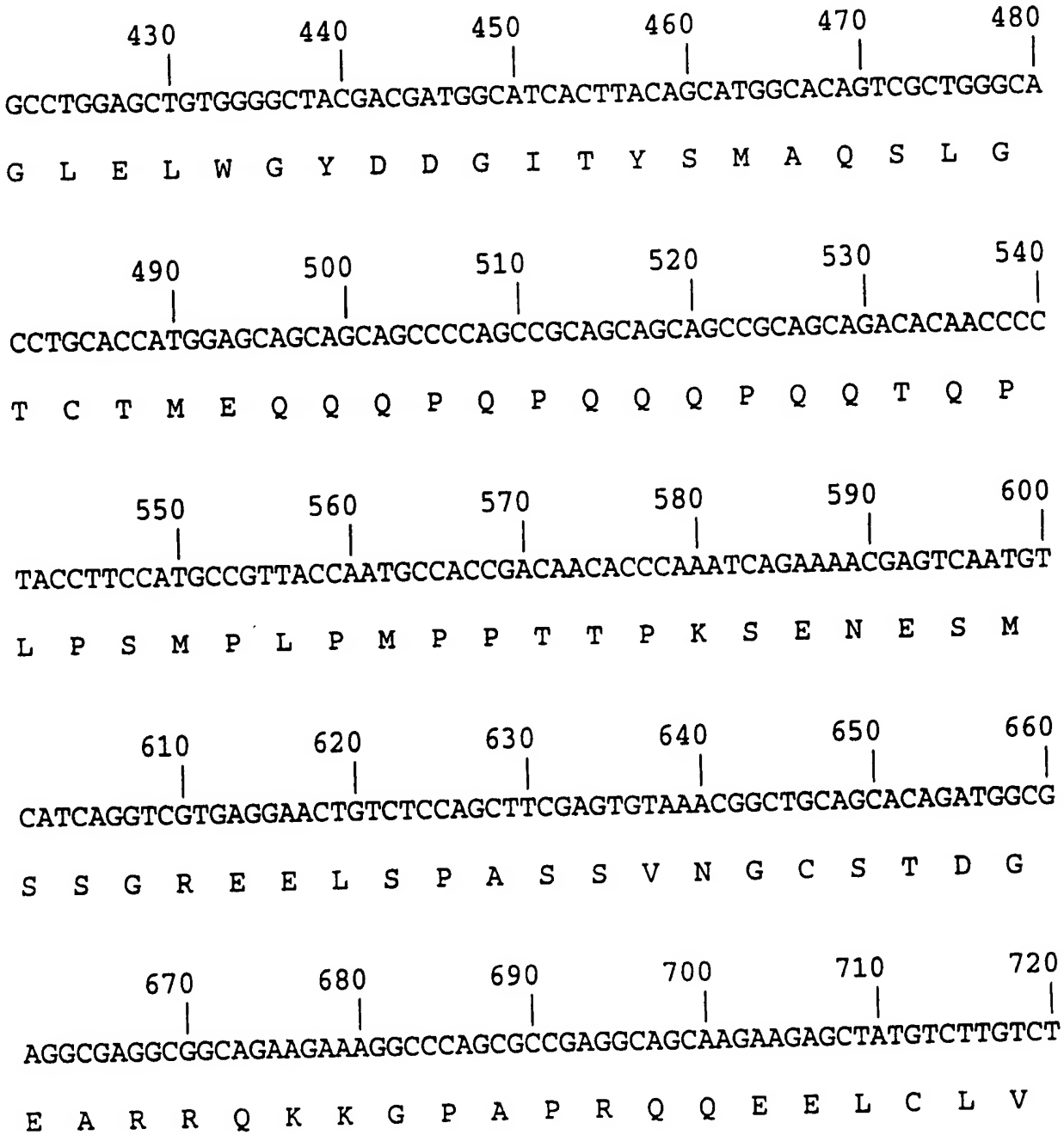
          130        140        150        160        170        180
          |          |          |          |          |          |
TTCGGTTTCGTTTGAACGTTGCGTAGACGAGTGGTGCATGTCCATGAGTCGCGTTTAGAT
```

Fig.4 i.



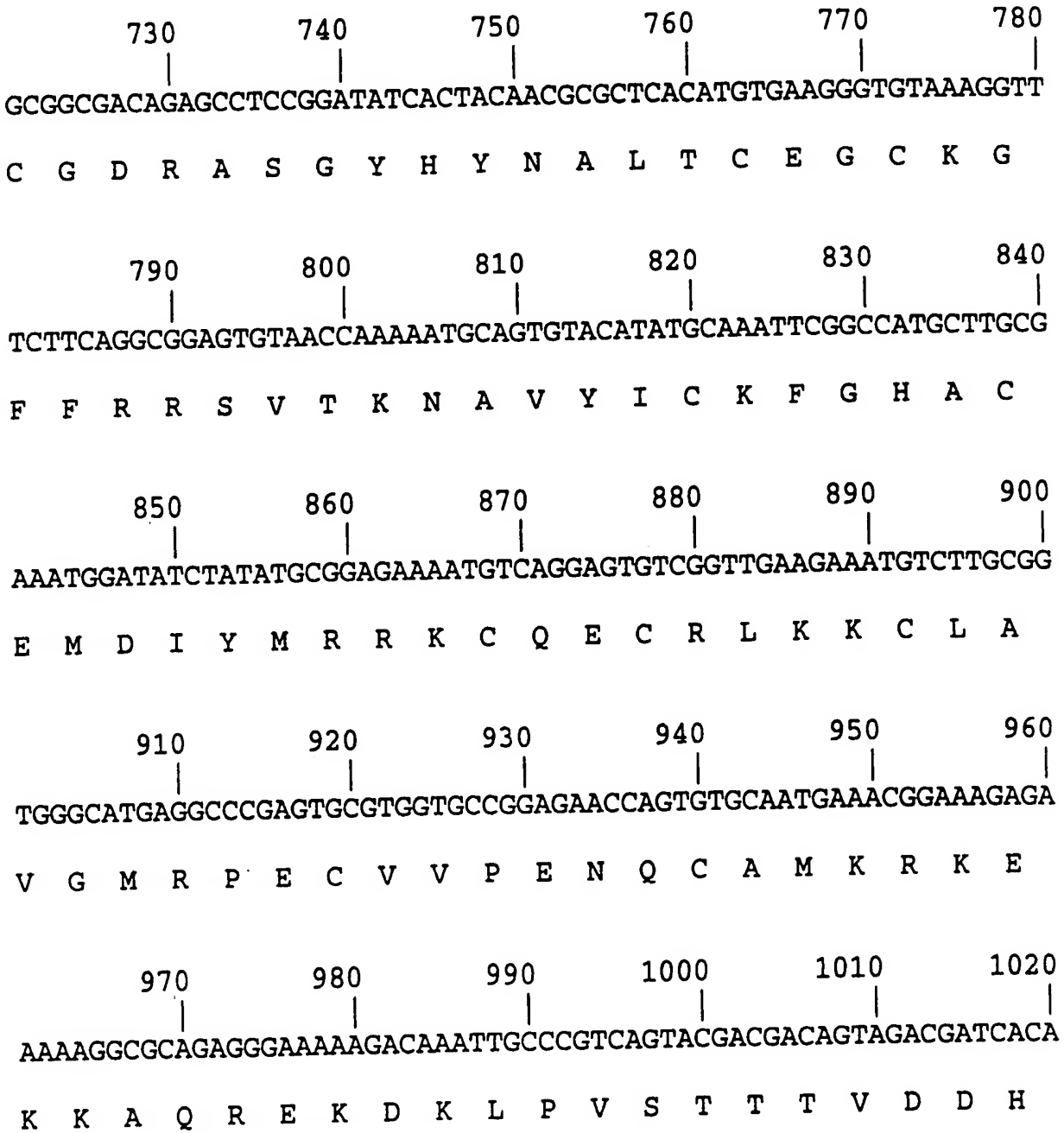
Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.4 ii.



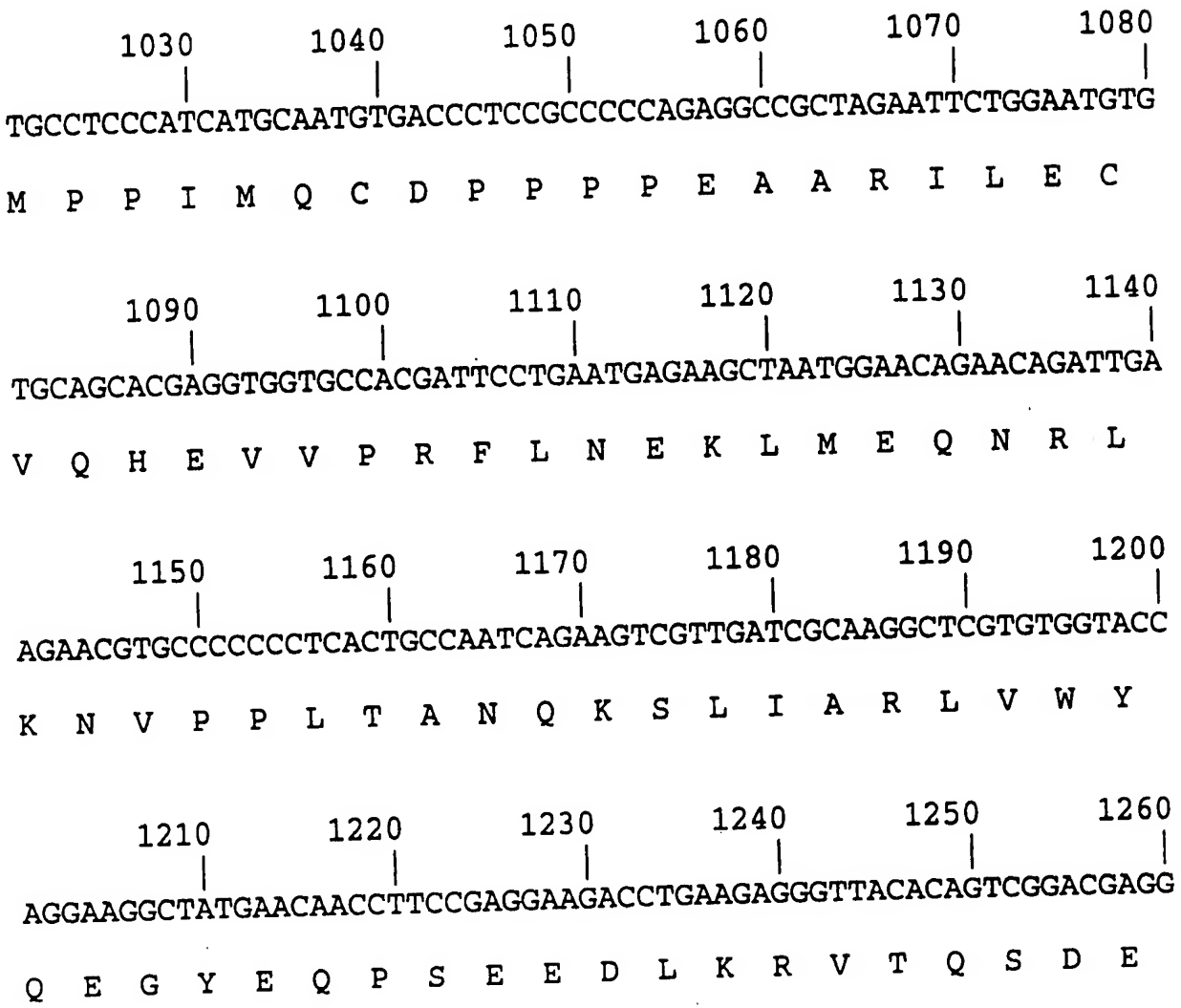
Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.4 iii.



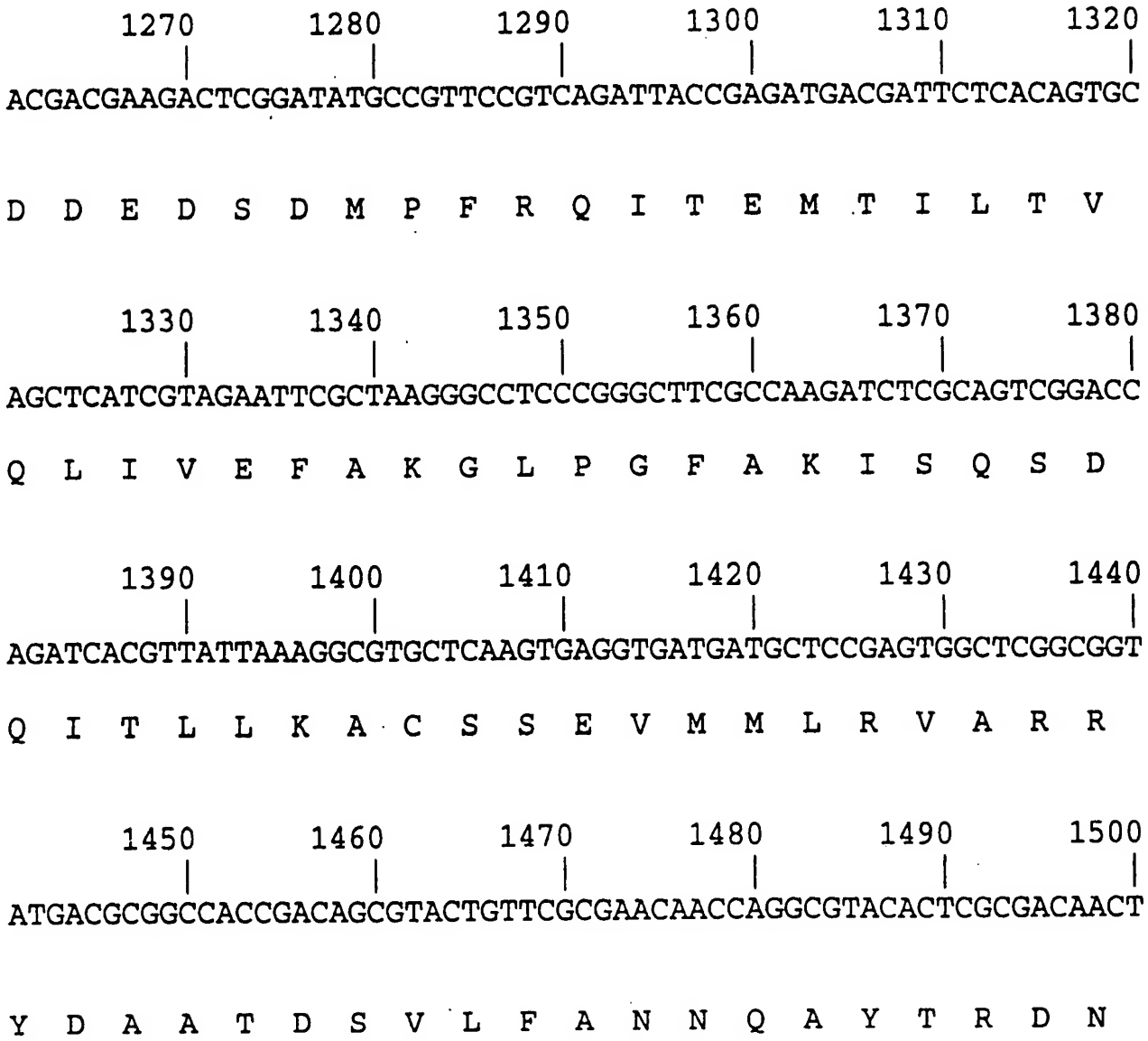
Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.4 iv.



Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.4 v.



Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

Fig.4 vi.

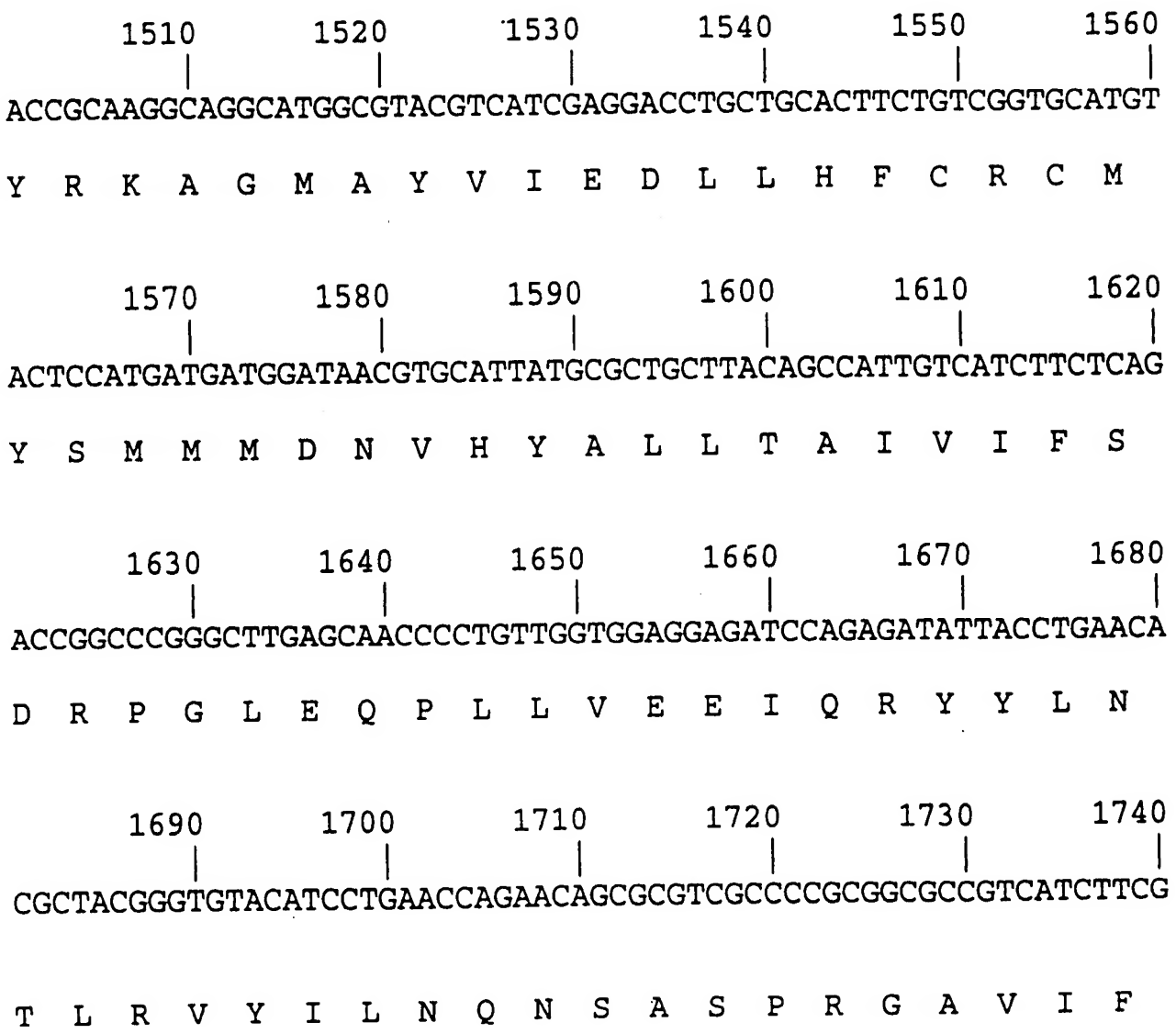


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Fig.4 vii.

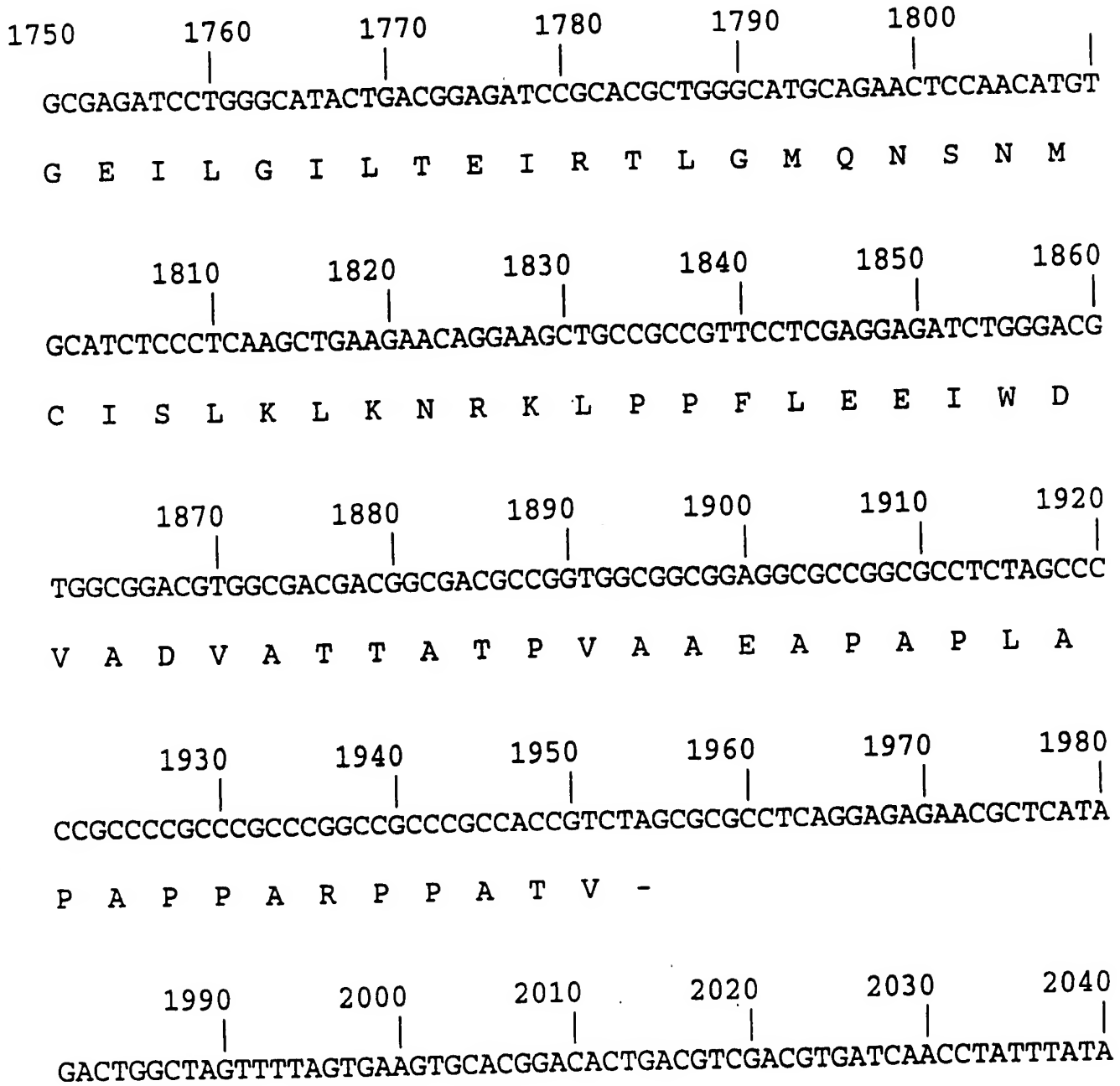

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Fig.4 viii.

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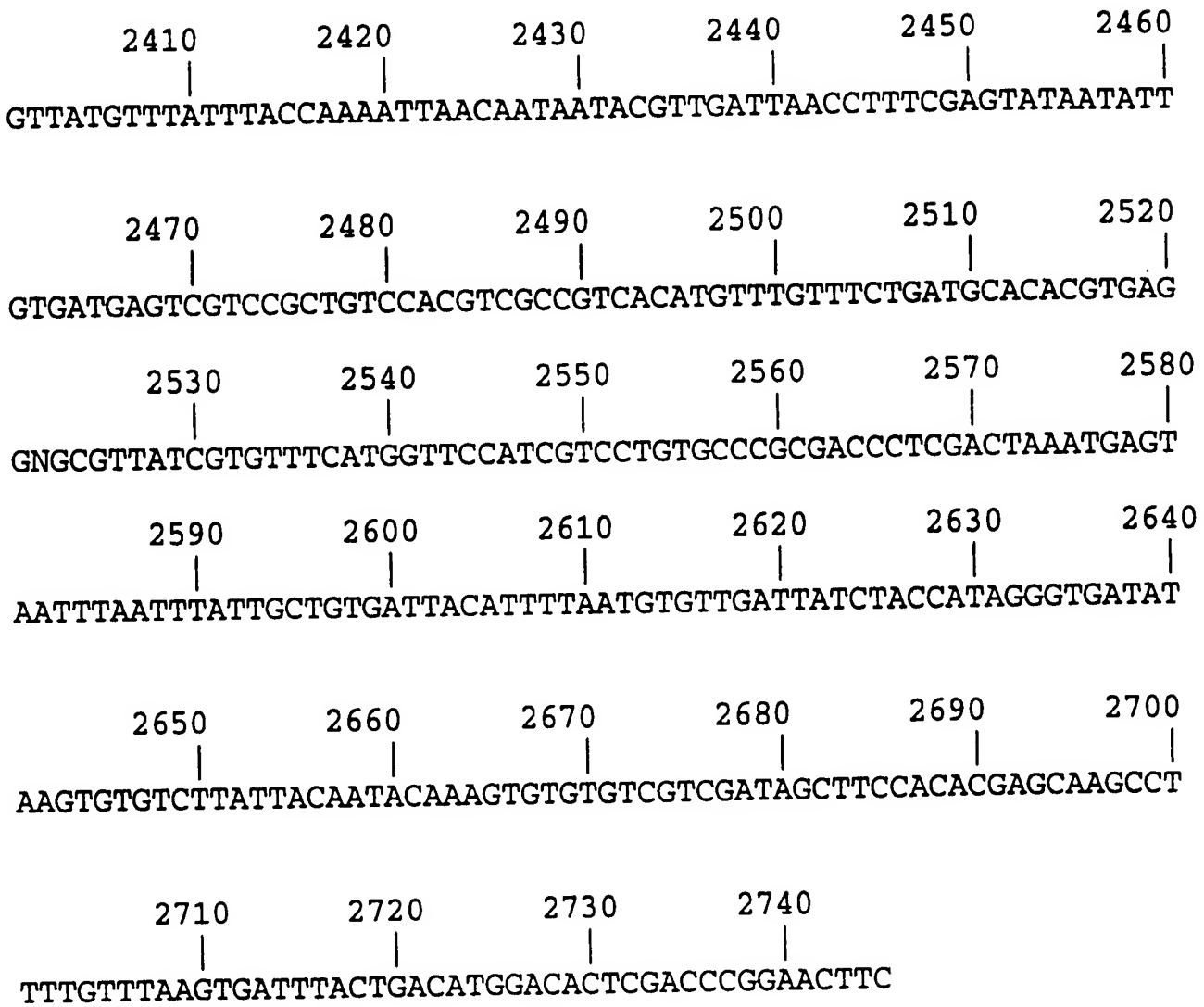
Fig.4 ix.



Title: METHOD FOR CONTROLLING GENE EXPRESSION IN A CELL
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Fig.5.

Sequence I.D. 5

```
BmECR       MRVENVDNVS      10
MsECR       ----------
HvECR       M---------       1
CtECR       ----------
AaECR       ----------
DmECR       ----------

BmECR       FALNGRADEWCMSVETRLDSLVREKSEVKAYVGGCPSVITDAGAYDALFD     60
MsECR       -------------------------------------------------
HvECR       -SLGARGYRRC-----------------------------------DTLAD     16
CtECR       -------------------------------------------------
AaECR       -------------------------------------------------
DmECR       -------------------------------------------------

BmECR       M-RRRWSNNGGFP-LRMLEESSSEVTSSSA-LGLPPAMVMSPESLASPEY    107
MsECR       M-RRRWSNNGCFP-LRMFEESSSEVTSSSA-FGMPAAMVMSPESLASPEY     47
HvECR       M-RRRWYNNGGFQTLRMLEESSSEVTSSSA-LGLPPAMVMSPESLASPEI     64
CtECR       M-K-------------------------TENLIVTT-VKVEPLNYASQSF     23
AaECR       MMKRRWSNNGGFTALRMLDDSSSEVTSSSAAL----GMTMSPNSLGSPNY     46
DmECR       M-KRRWSNNGGF--MRLPEESSSEVTSSSNGLVLPSGVNMSPSSLDSHDY     47
            *                        .. .     . ..* . .*..
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Fig.5 i.

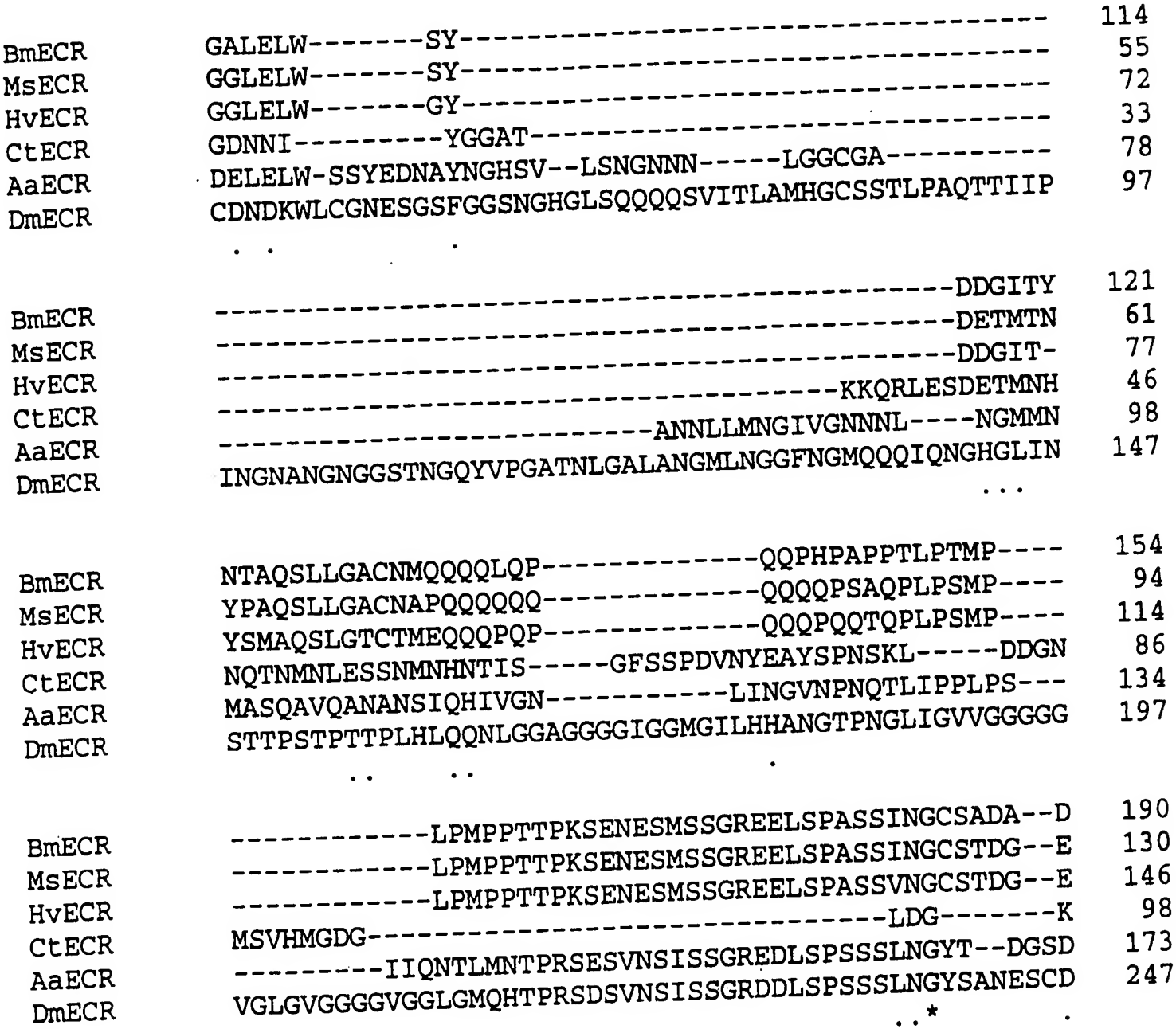

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Fig.5 ii.

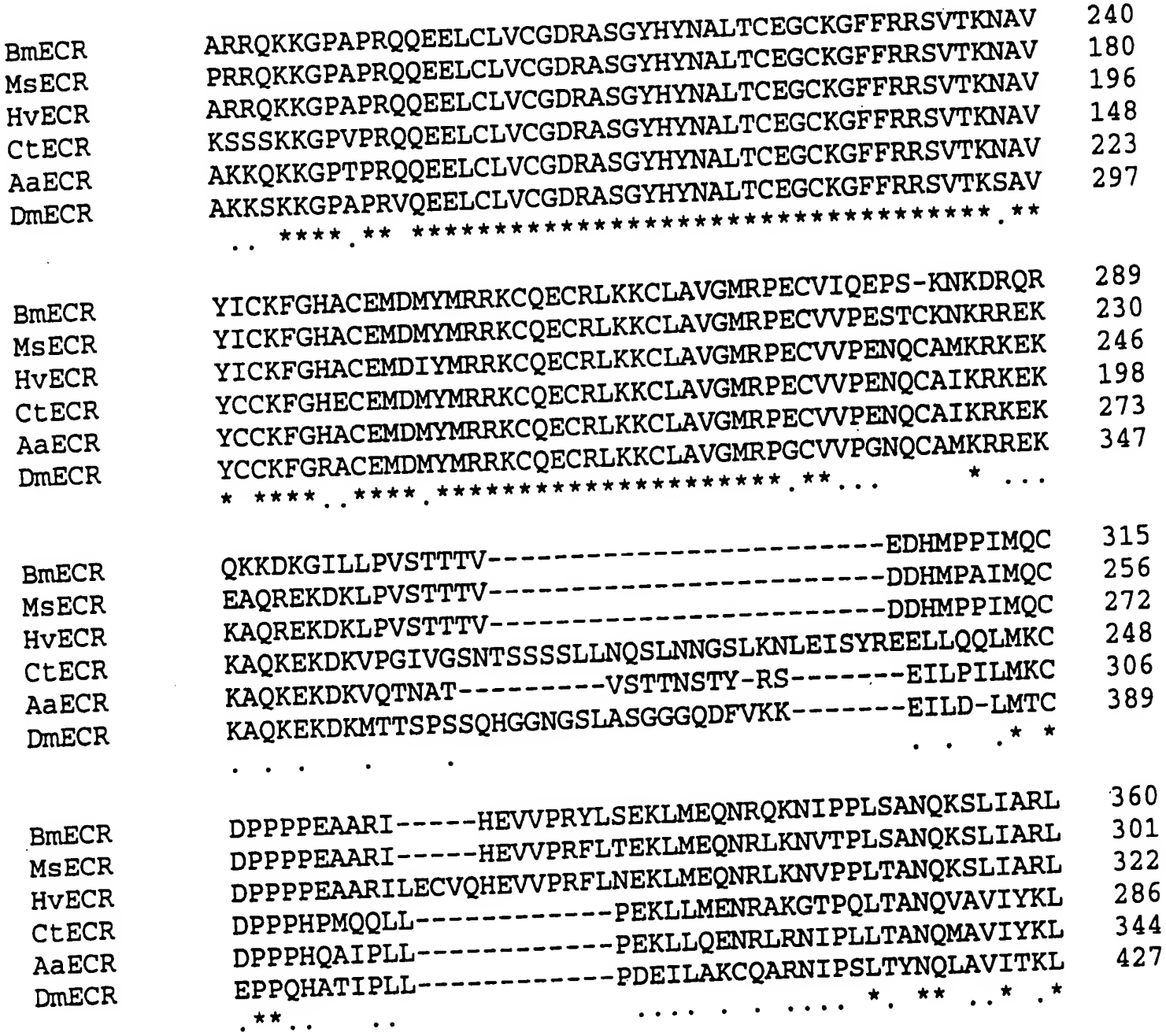

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Fig.5 iii.

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Fig.5 iv.

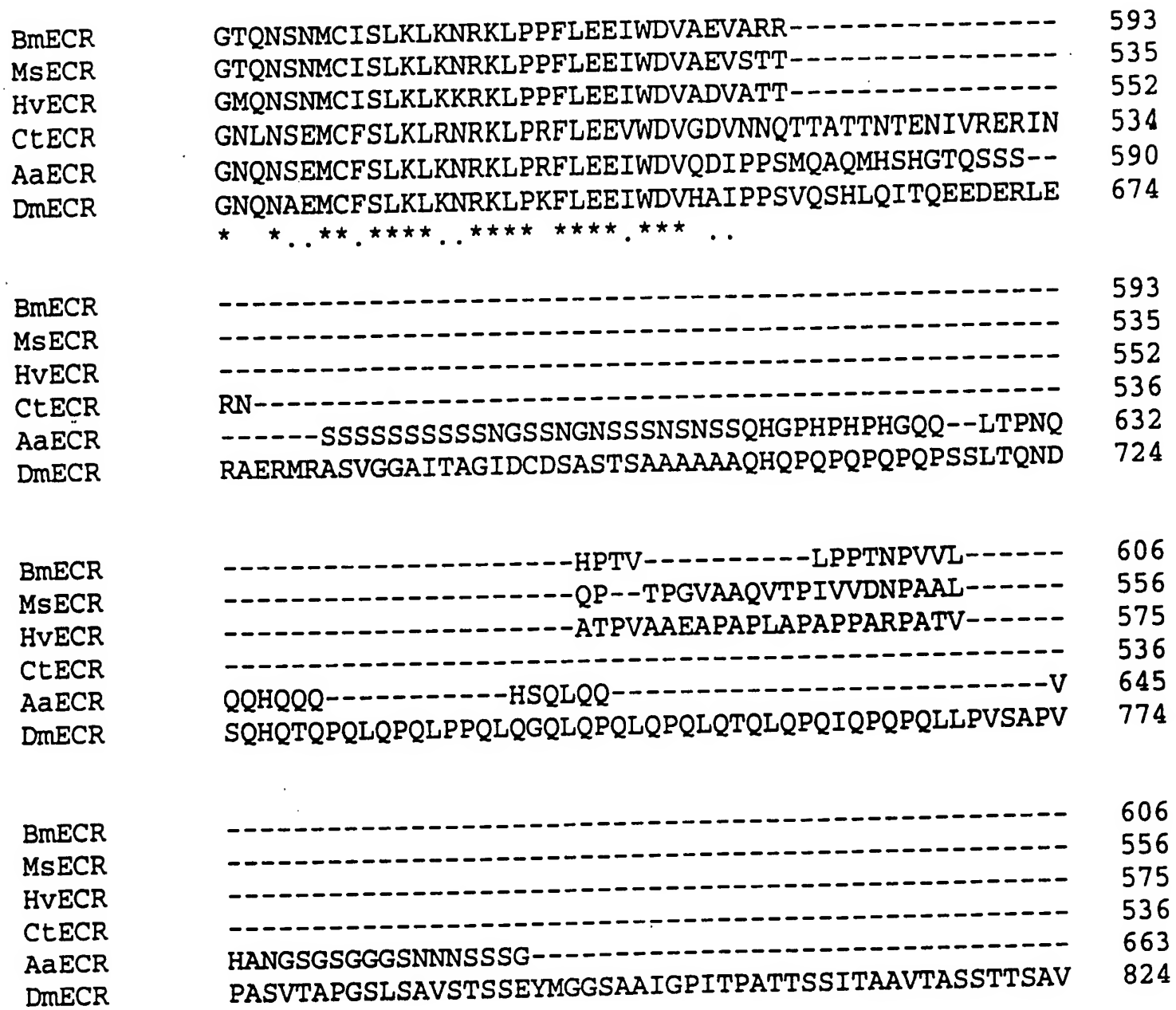

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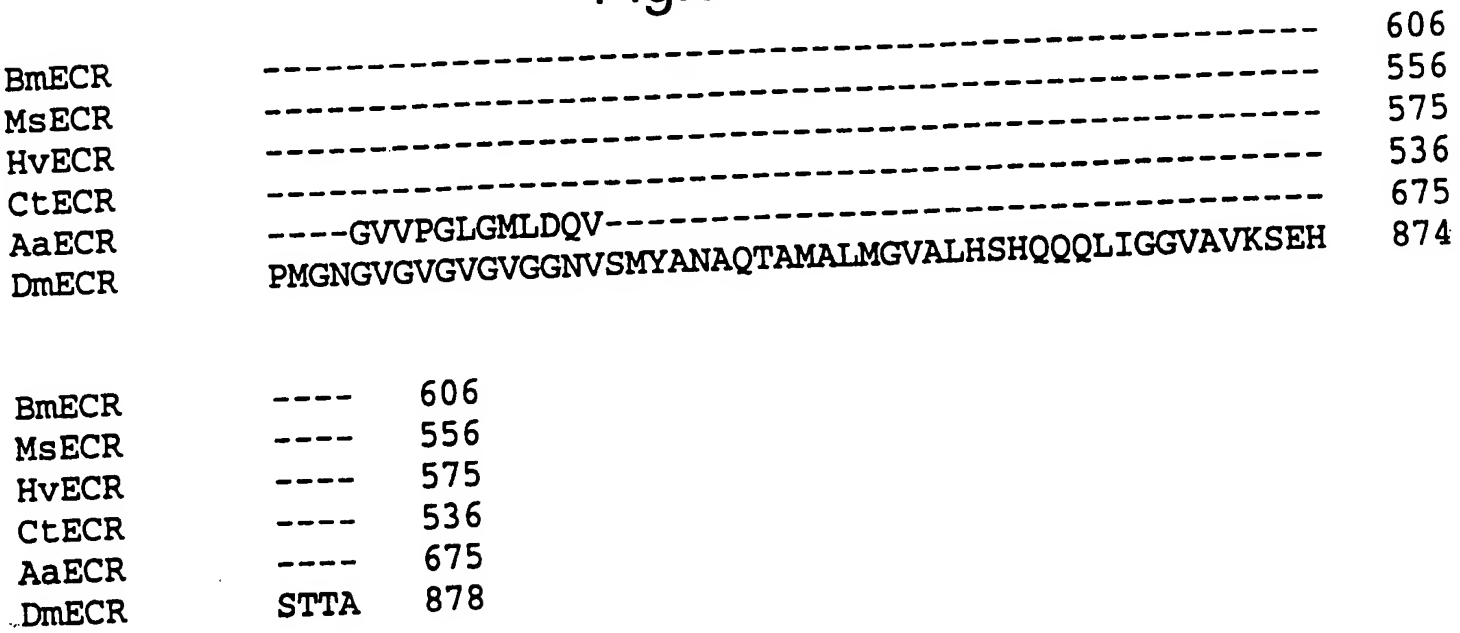
Fig.5 v.



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Inventor: Jepson et al.
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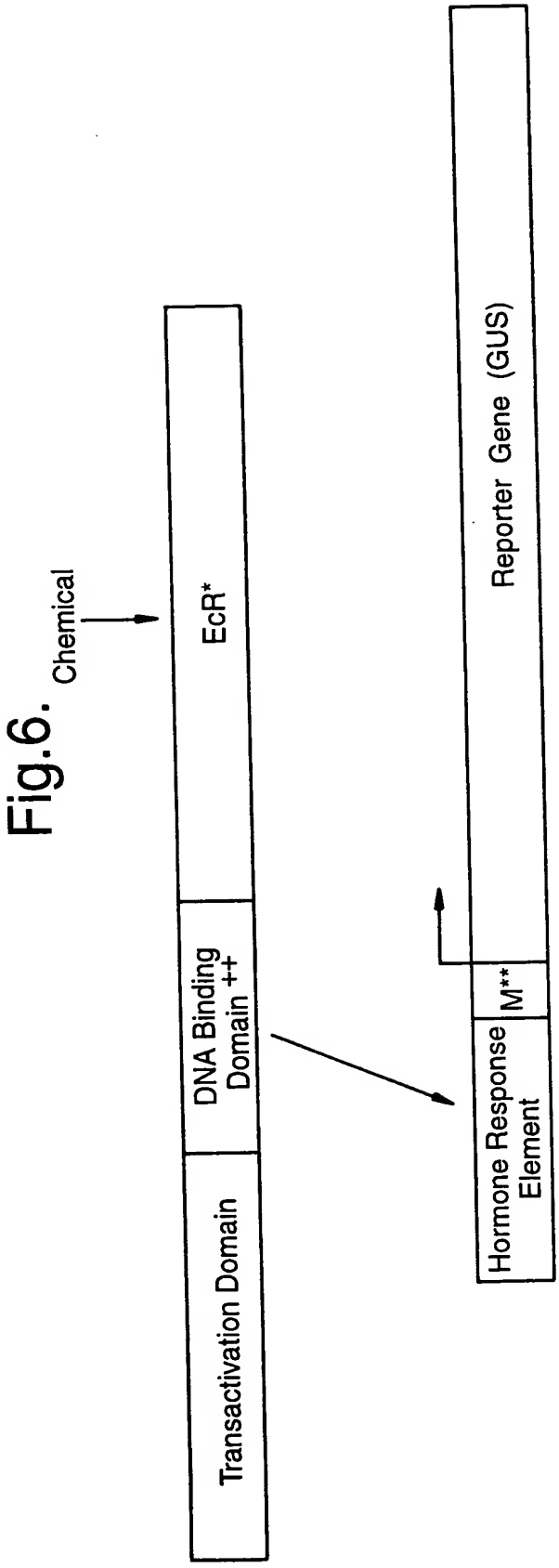
Fig.6.



++ Glucocorticoid receptor DNA binding and transactivation domains
* Insect ecdysone ligand binding domain
** Minimal 35S CaMV promoter

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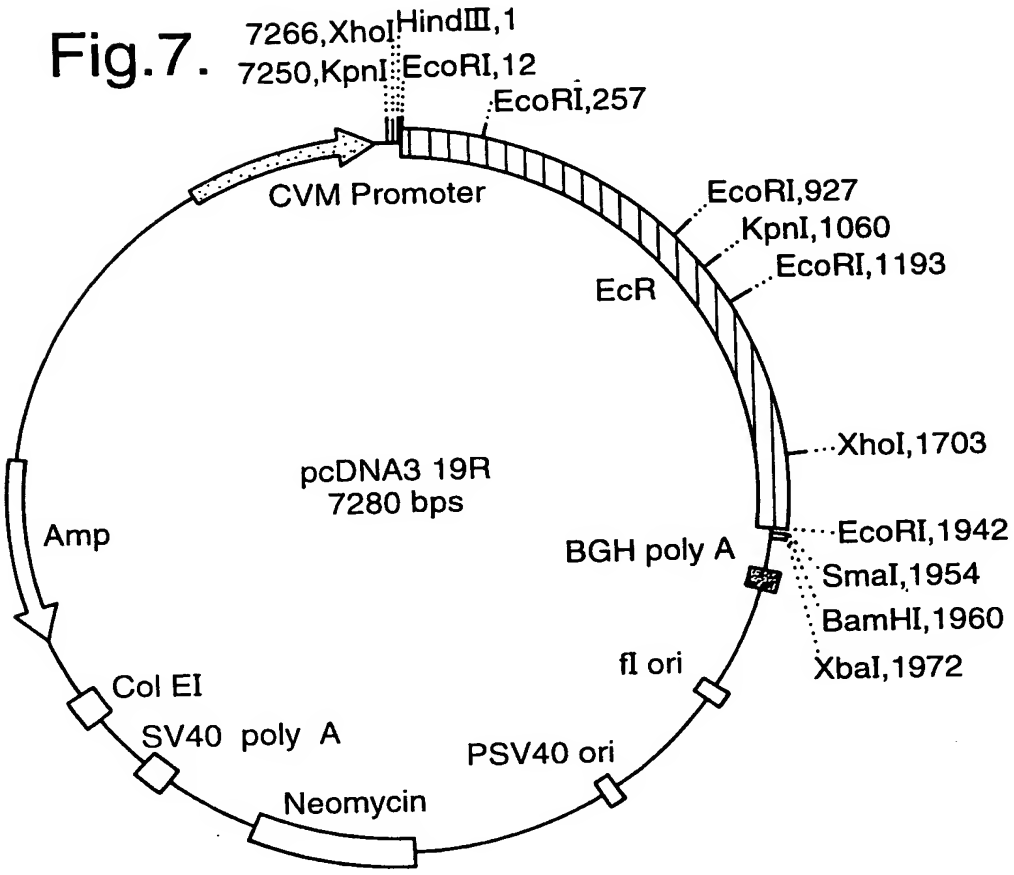
Fig.7.



Response Element for HecR

Fig.8.

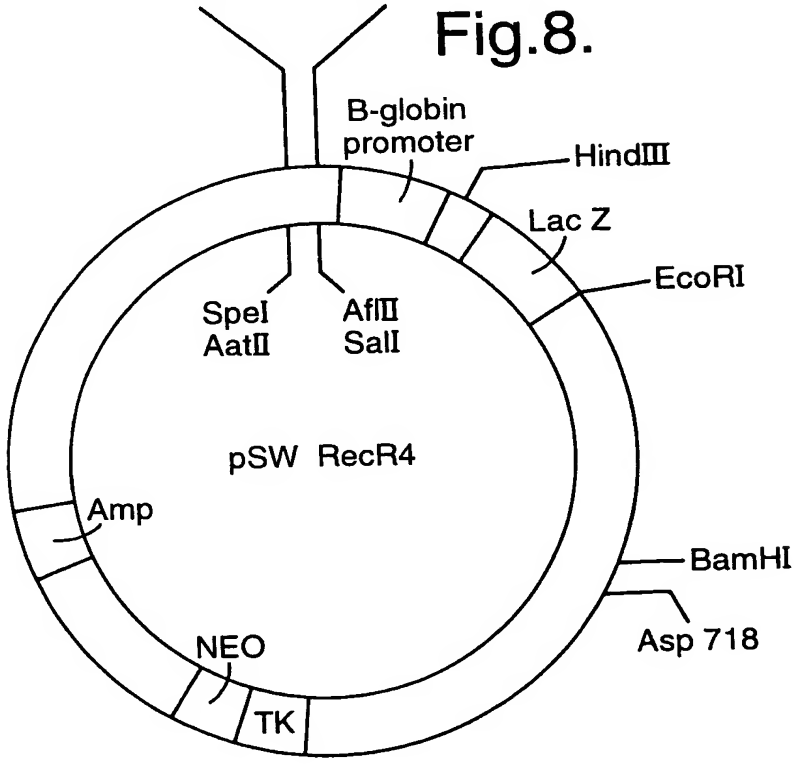


Fig.9.

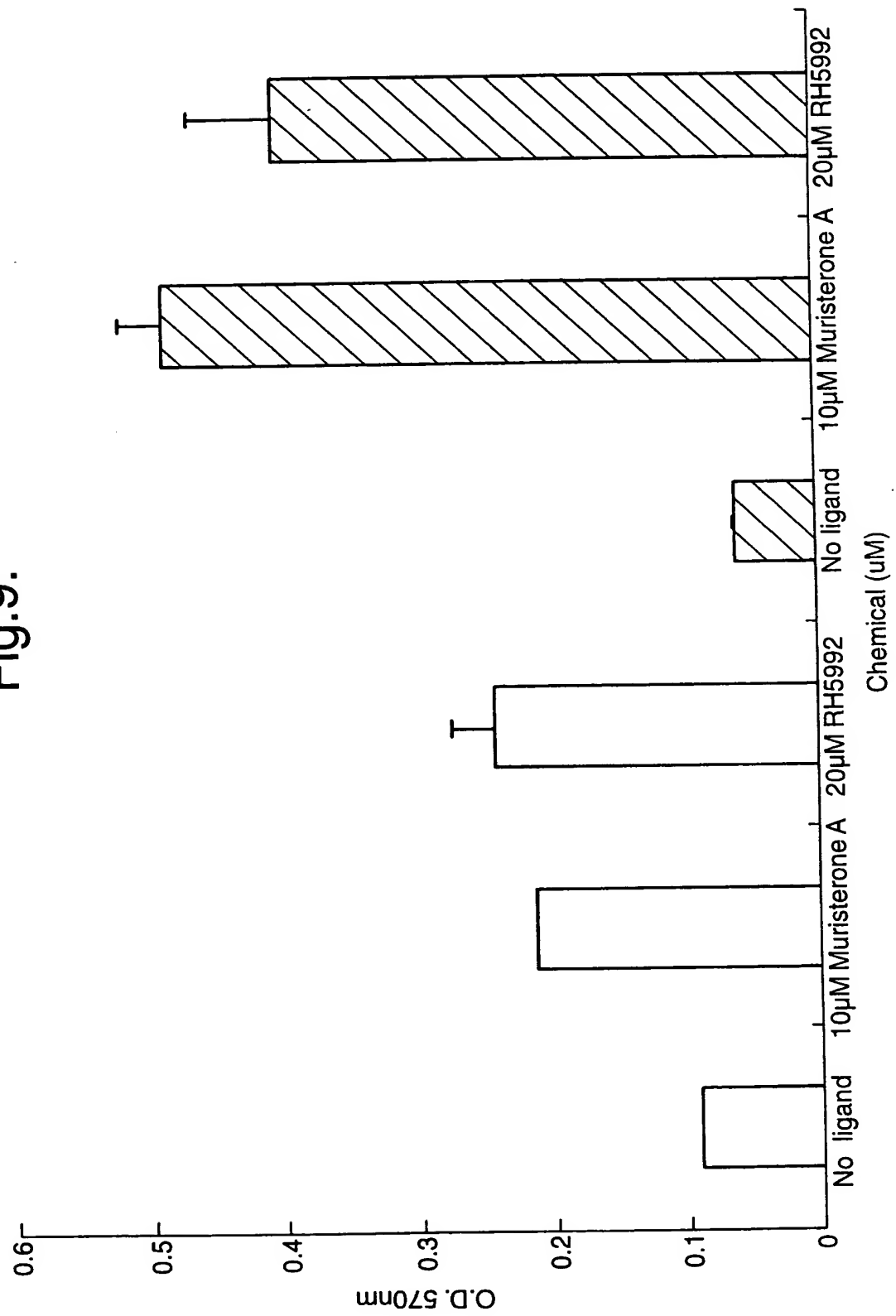

O.D. 570nm
0.6
0.5
0.4
0.3
0.2
0.1
0
No ligand
10μM Muristerone A
20μM RH5992
No ligand
10μM Muristerone A
20μM RH5992
Chemical (uM)

Fig.10.

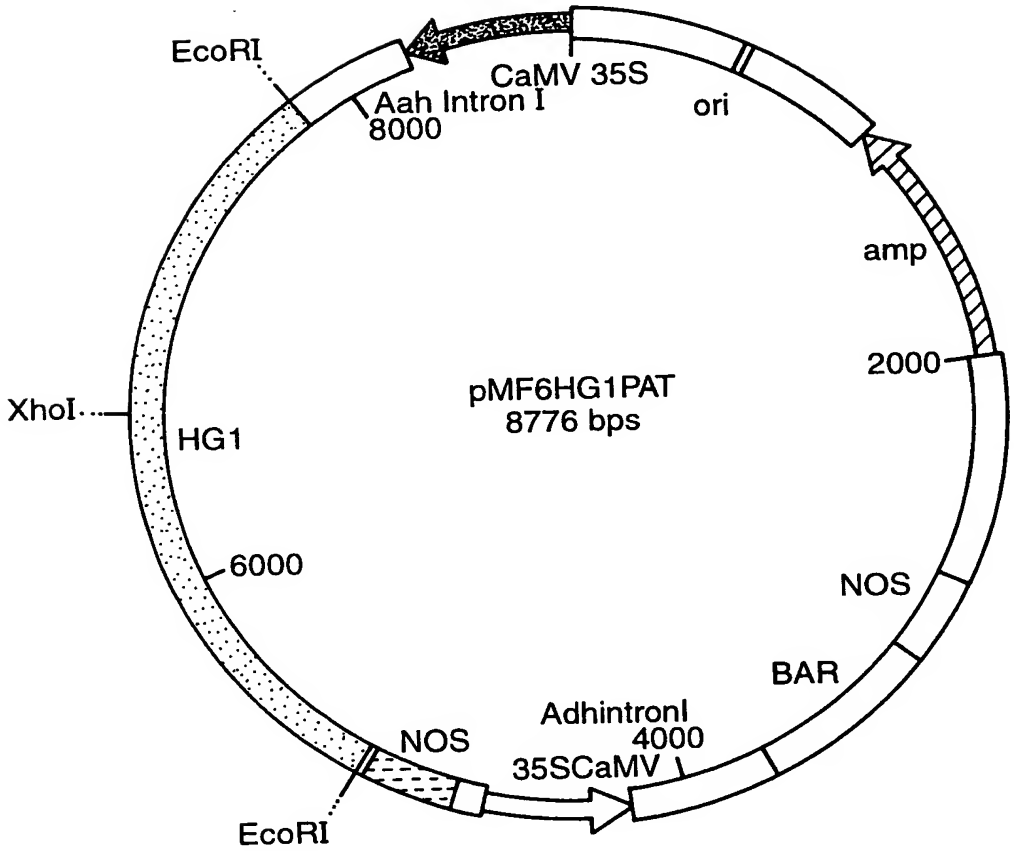

EcoRI
CaMV 35S
Aah Intron I
8000
ori
amp
2000
pMF6HG1PAT
8776 bps
XhoI
HG1
6000
NOS
BAR
AdhintronI
4000
NOS
35SCaMV
EcoRI

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Fig.11.

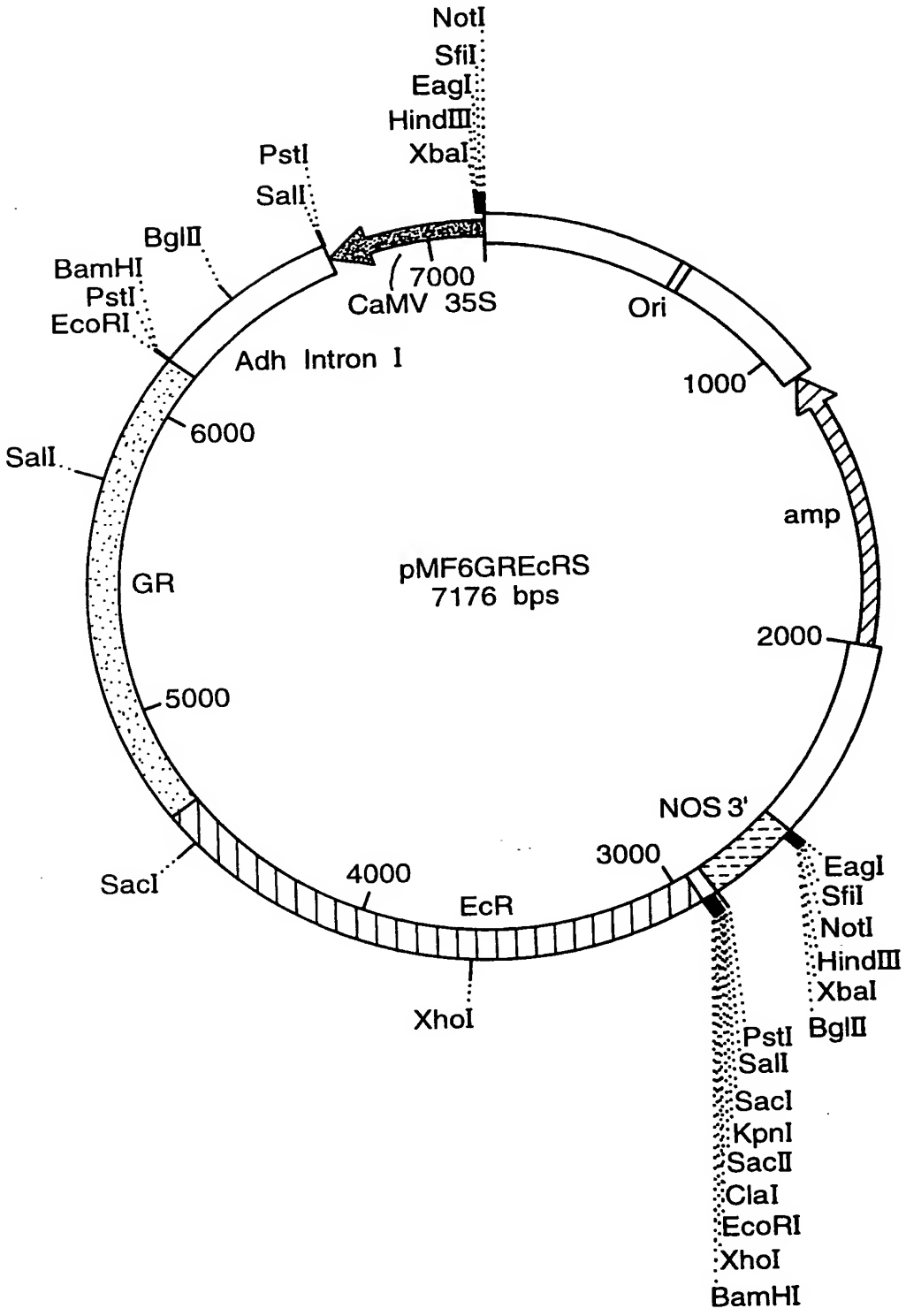

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Fig.12.

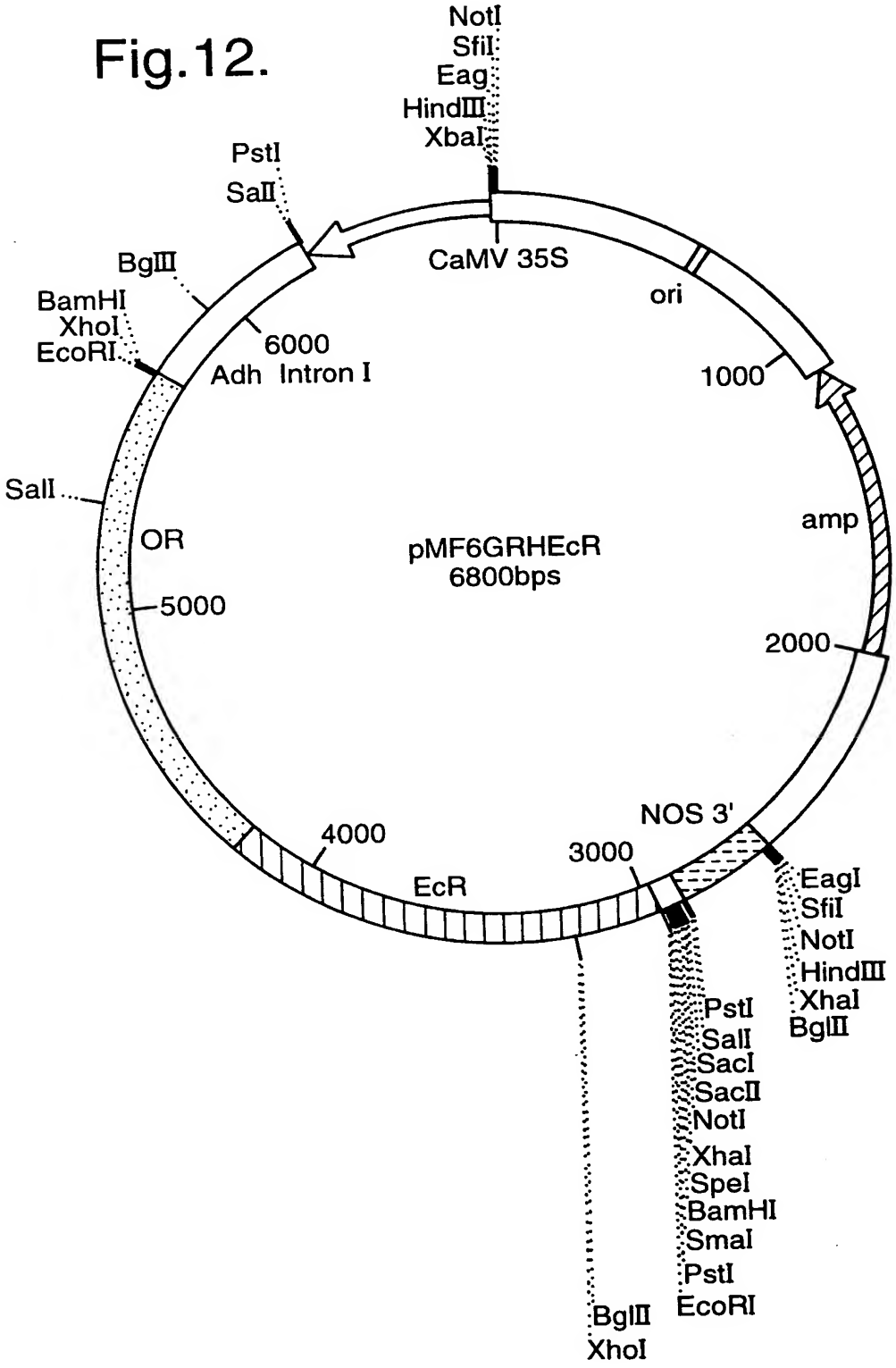

Fig.13.

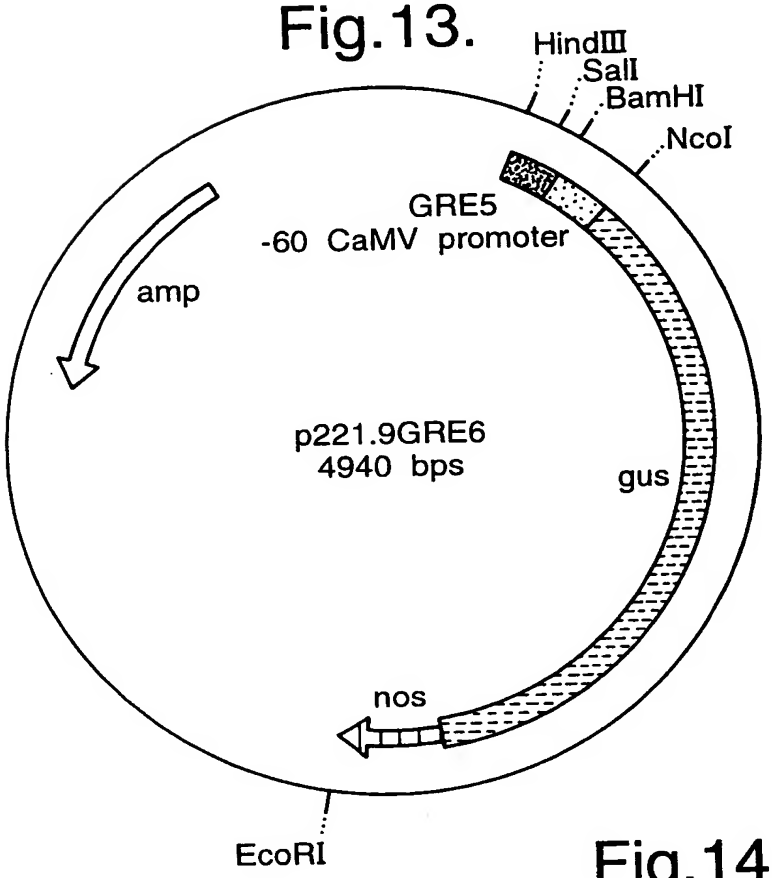
HindIII
SalI
BamHI
NcoI
GRE5
-60 CaMV promoter
amp
p221.9GRE6
4940 bps
gus
nos
EcoRI

Fig.14.

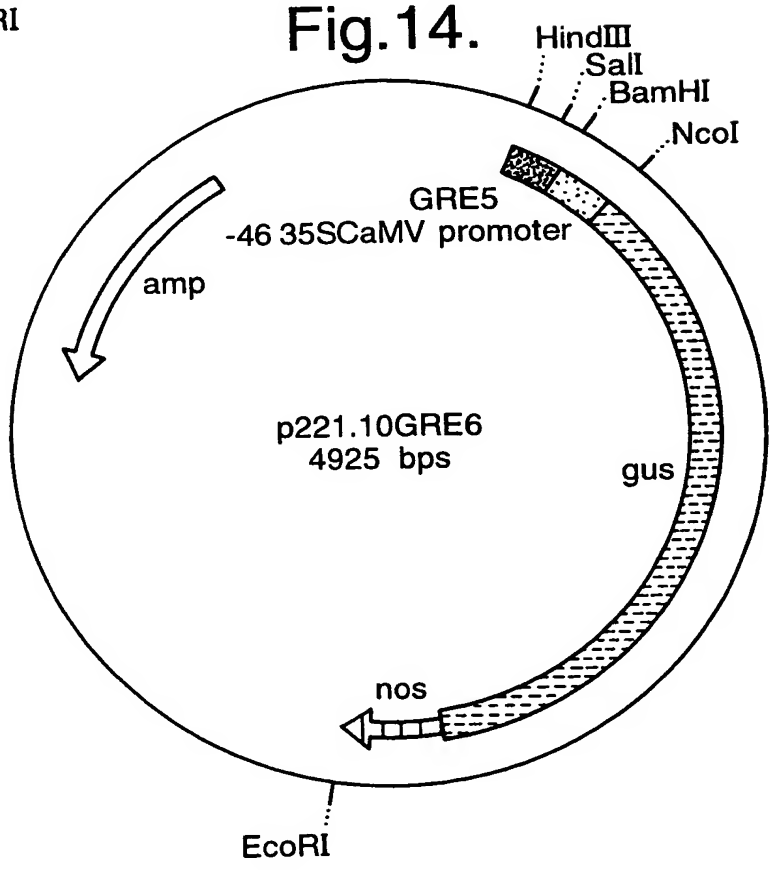
HindIII
SalI
BamHI
NcoI
GRE5
-46 35SCaMV promoter
amp
p221.10GRE6
4925 bps
gus
nos
EcoRI

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Fig.15.

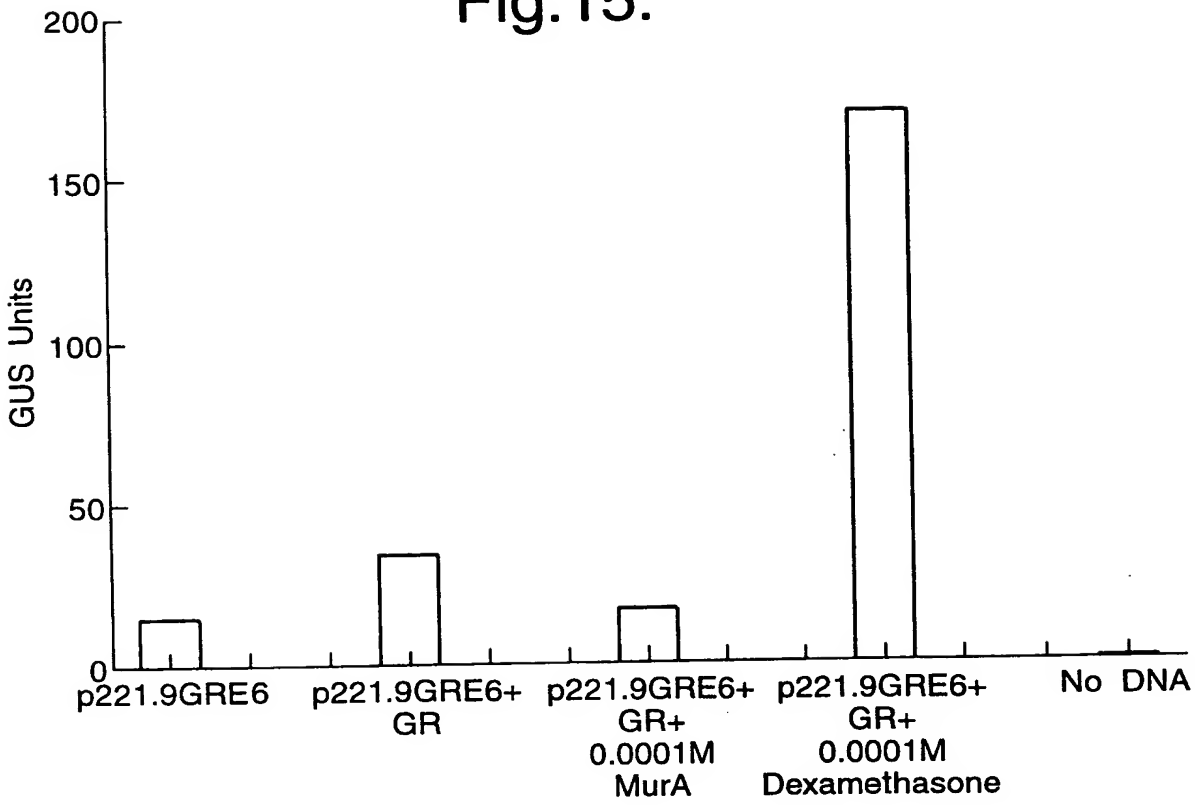

Fig.16.

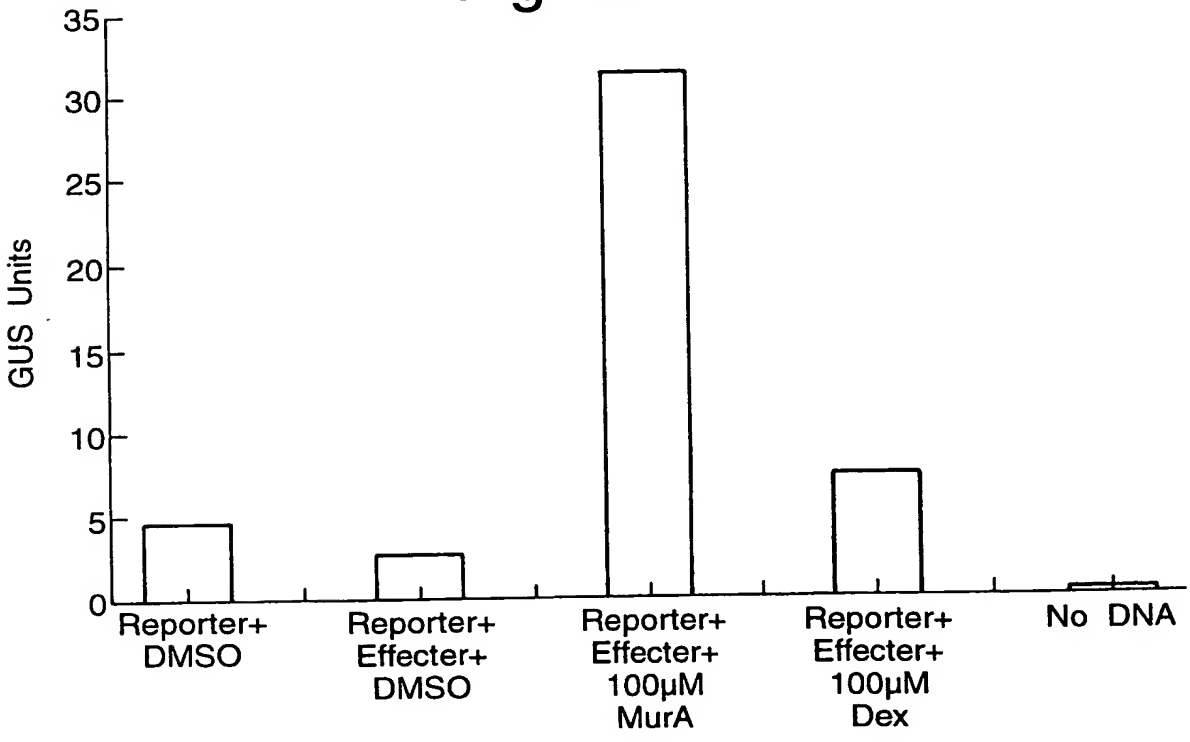

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Fig.17.

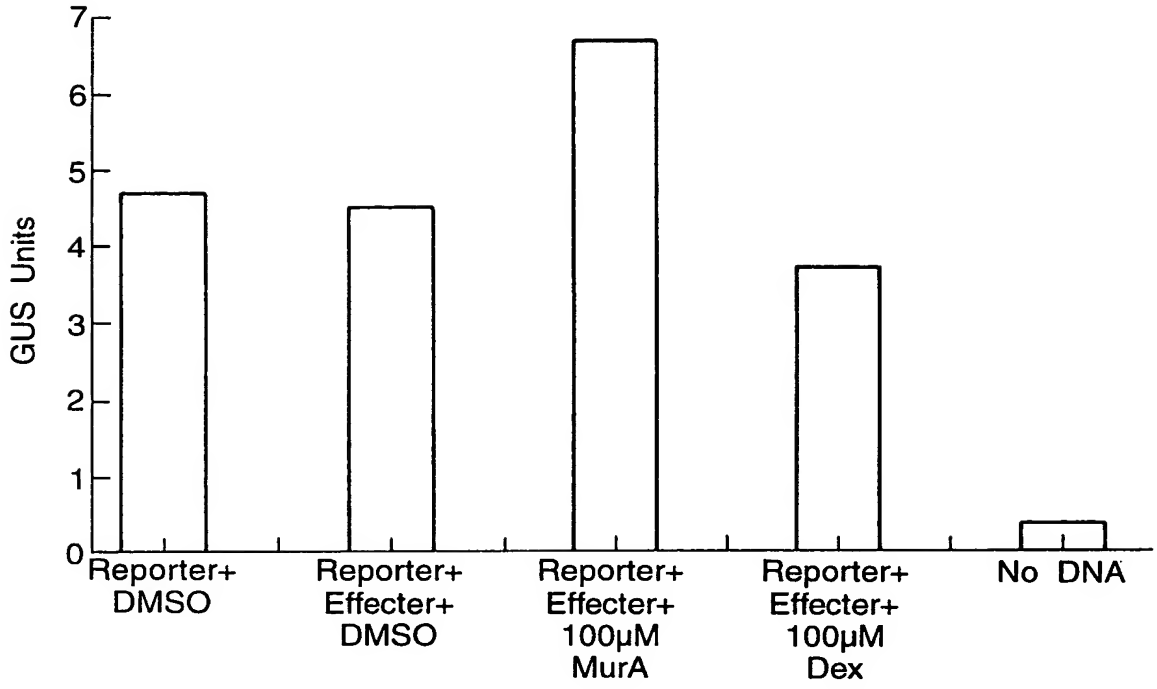

Fig.18.

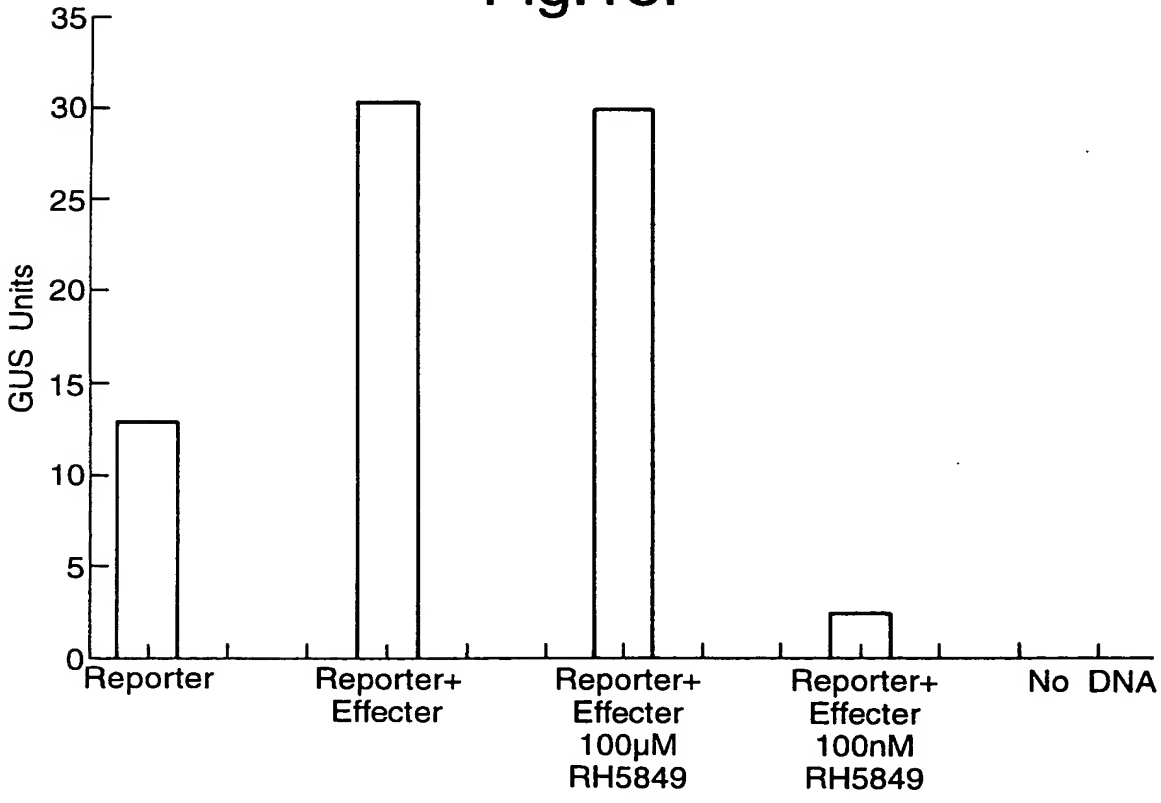

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Fig.19.

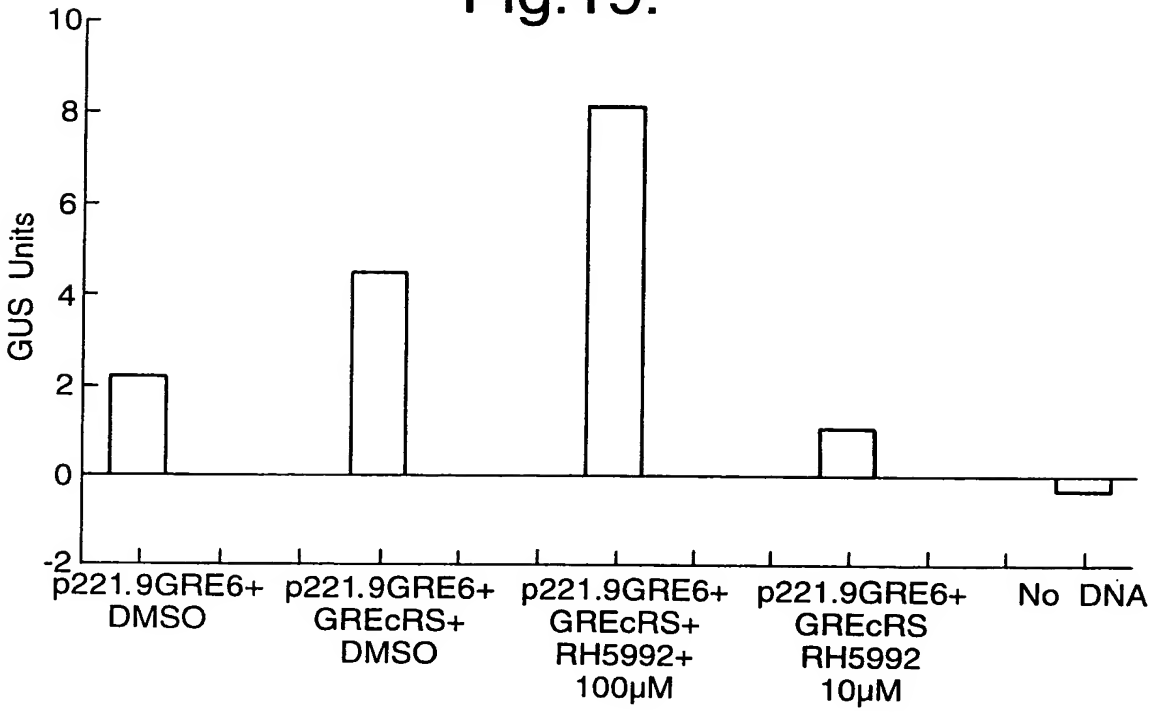

Fig.20.

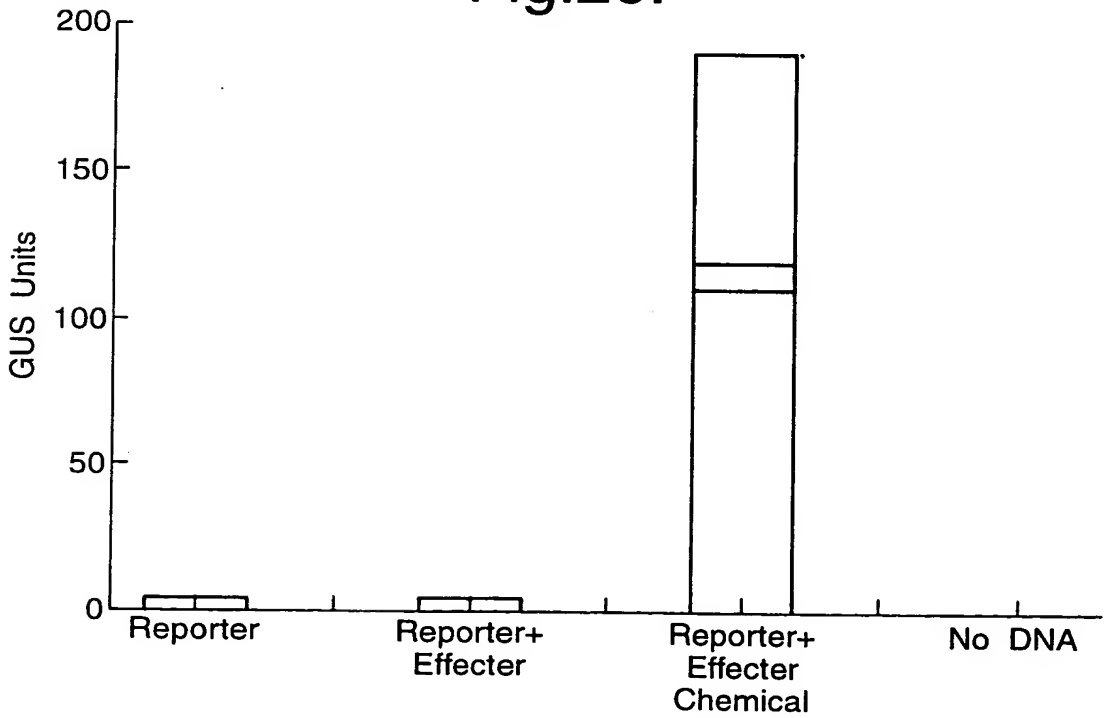

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Fig.21.

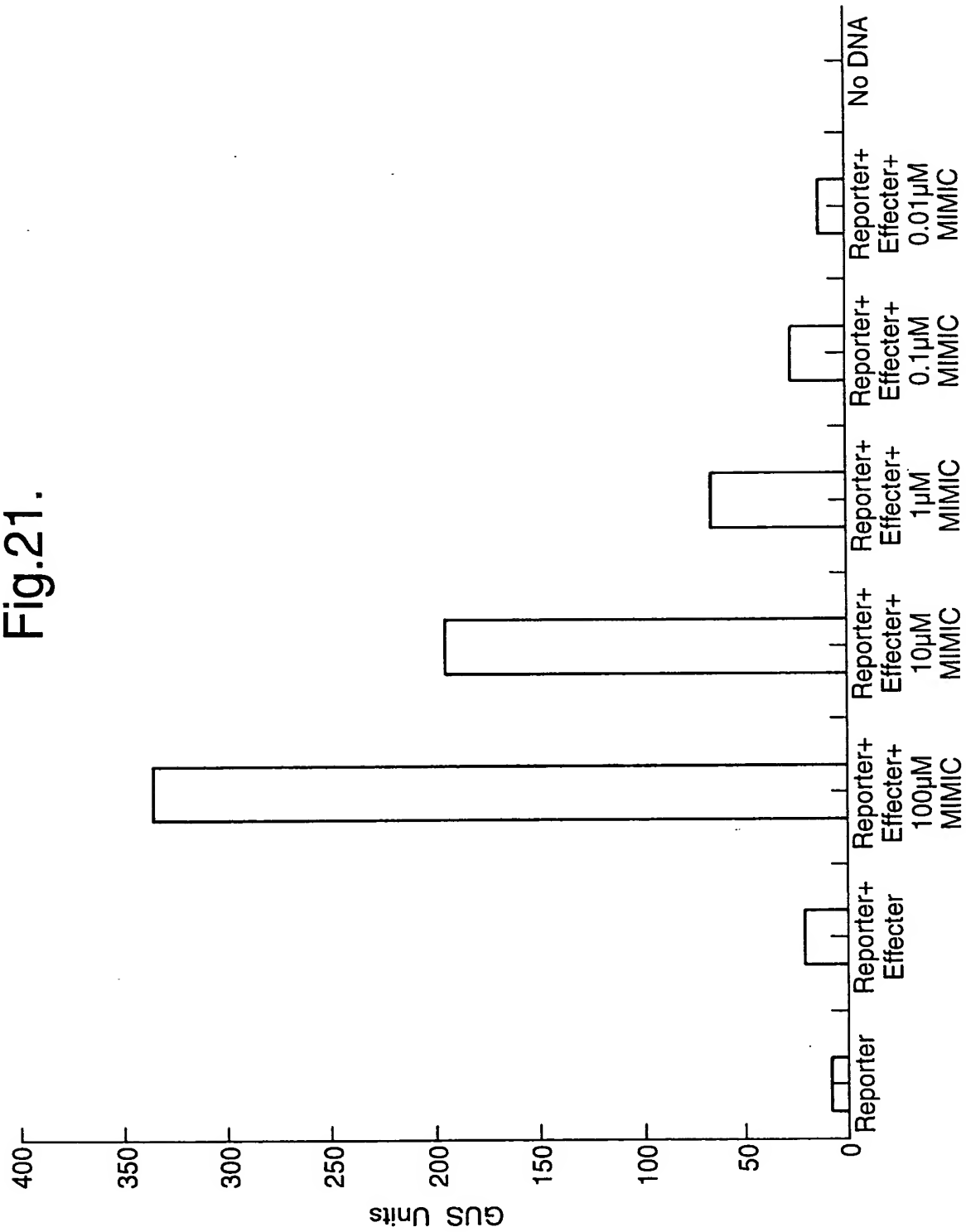

Fig.22.

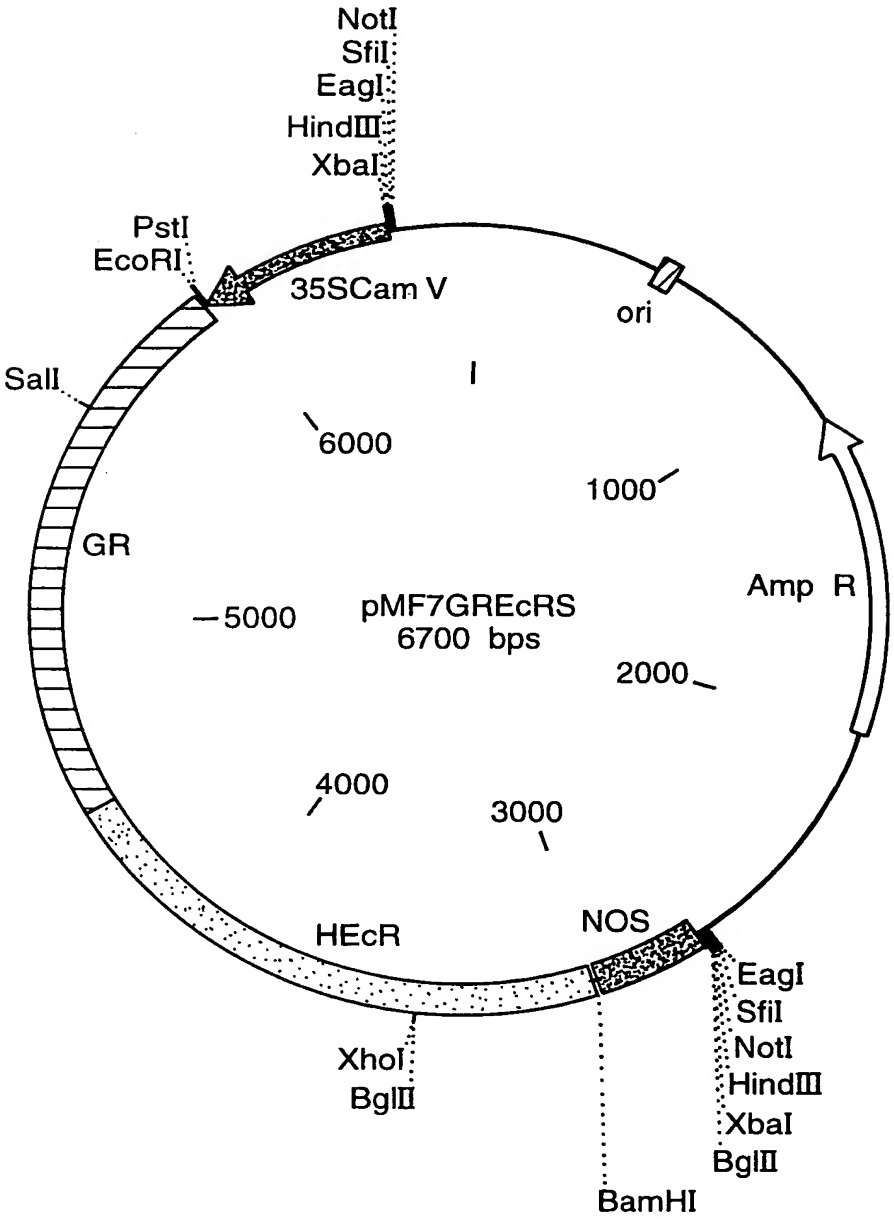
NotI
SfiI
EagI
HindIII
XbaI
PstI
EcoRI
35SCam V
ori
SalI
I
6000
1000
GR
Amp R
5000
pMF7GREcRS
6700 bps
2000
4000
3000
HEcR
NOS
EagI
SfiI
NotI
HindIII
XbaI
BglII
XhoI
BglII
BamHI

Fig.23.

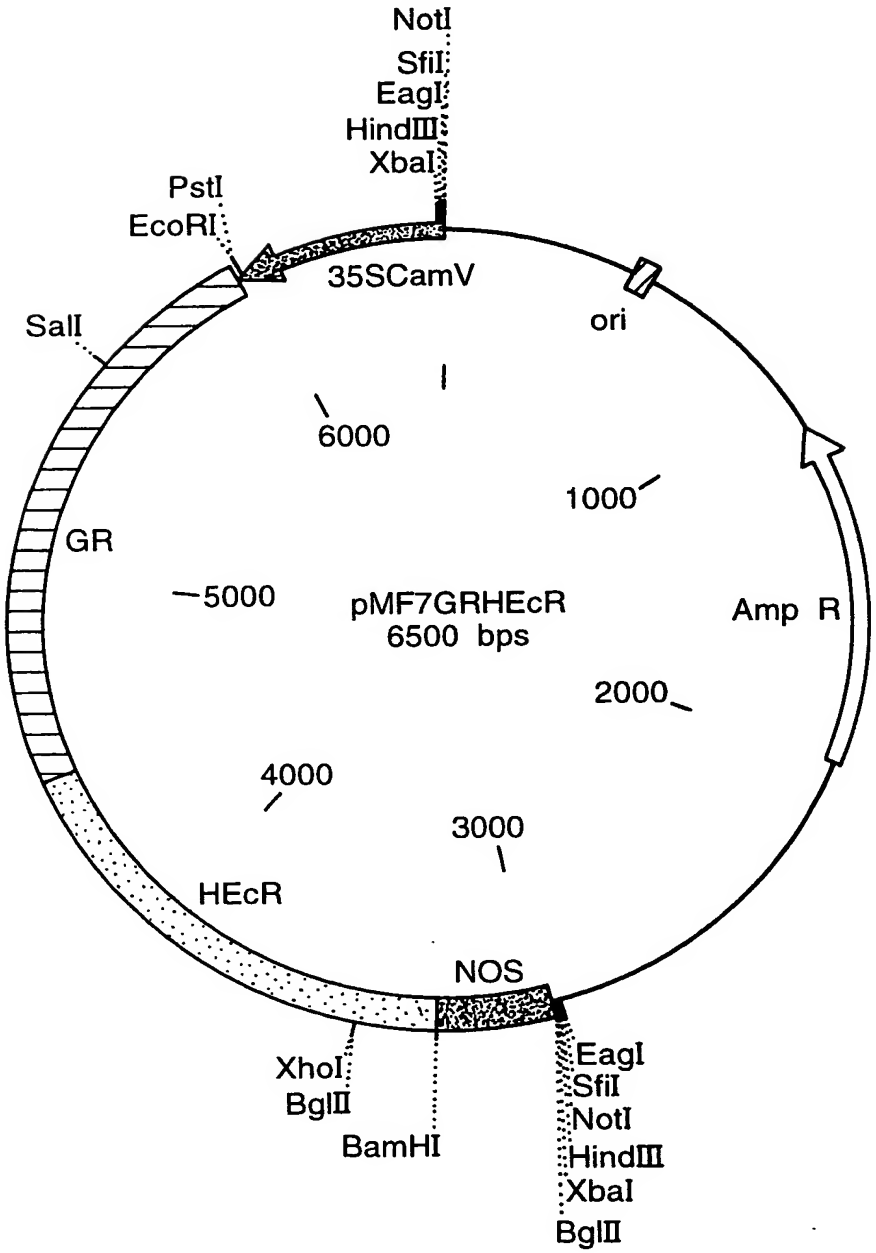
NotI
SfiI
EagI
HindIII
XbaI
PstI
EcoRI
35SCamV
ori
SalI
6000
1000
GR
5000
pMF7GRHEcR
6500 bps
Amp R
2000
4000
3000
HEcR
NOS
XhoI
BglII
BamHI
EagI
SfiI
NotI
HindIII
XbaI
BglII

Fig.24.

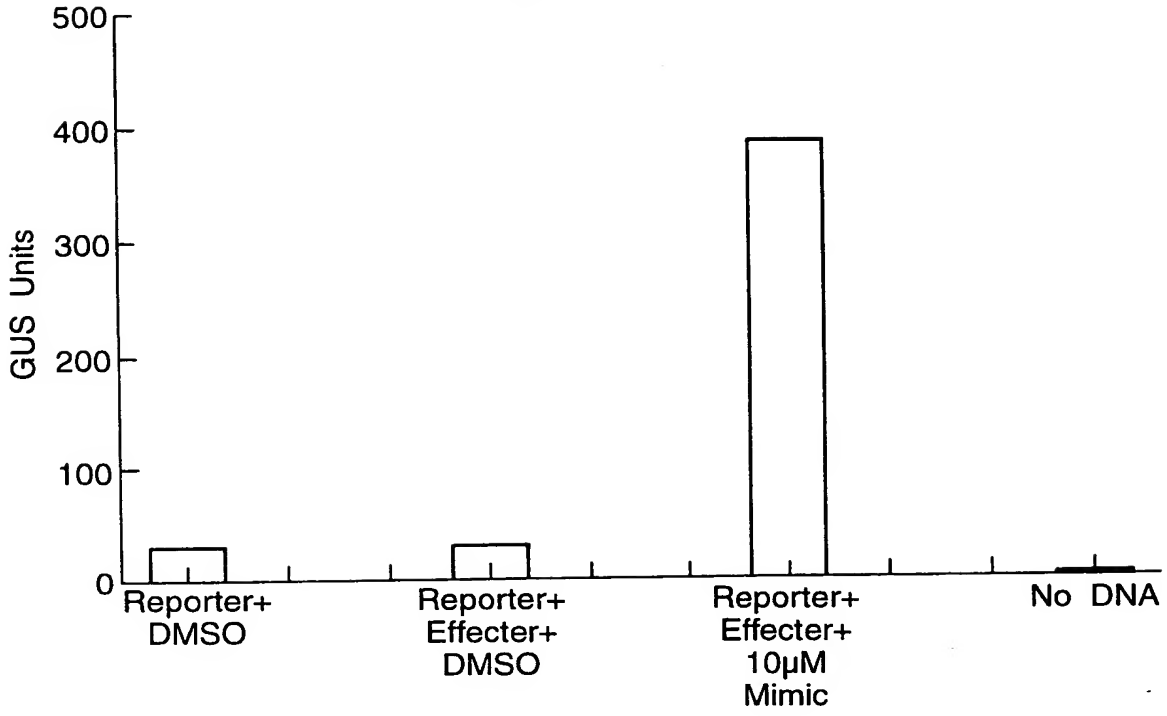
500
400
300
200
100
0
GUS Units
Reporter+ DMSO
Reporter+ Effecter+ DMSO
Reporter+ Effecter+ 10μM Mimic
No DNA

Fig.26.

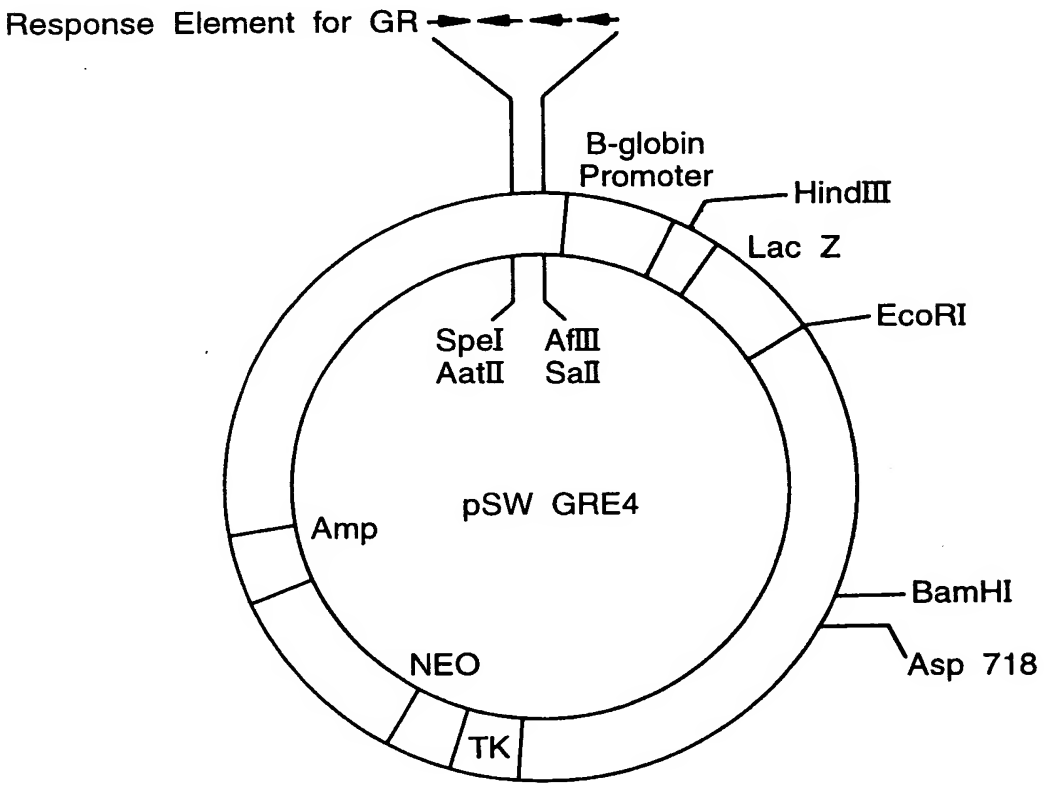
Response Element for GR
B-globin Promoter
HindIII
Lac Z
EcoRI
SpeI
AatII
AflII
SalI
pSW GRE4
Amp
BamHI
Asp 718
NEO
TK

Fig.25.

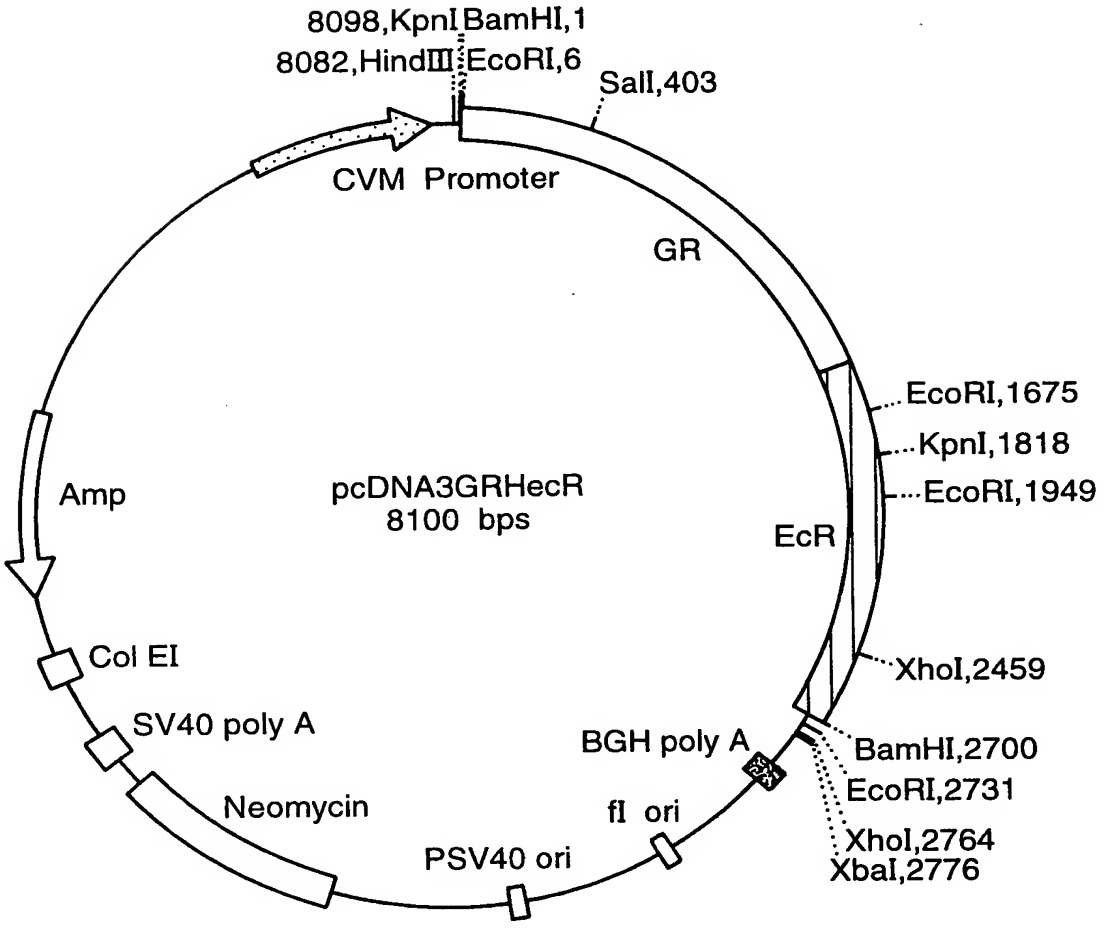
8098,KpnI BamHI,1
8082,HindIII EcoRI,6
SalI,403
CVM Promoter
GR
EcoRI,1675
KpnI,1818
EcoRI,1949
Amp
pcDNA3GRHecR
8100 bps
EcR
Col EI
XhoI,2459
SV40 poly A
BGH poly A
BamHI,2700
EcoRI,2731
Neomycin
fl ori
XhoI,2764
XbaI,2776
PSV40 ori

Fig.27.

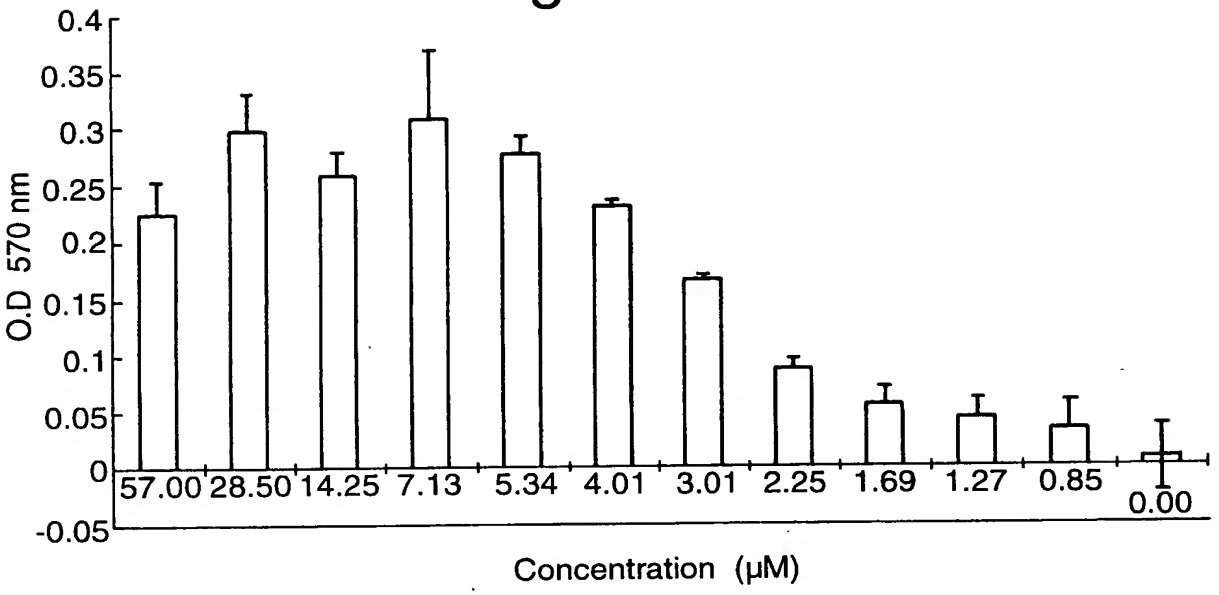
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
O.D 570 nm
57.00
28.50
14.25
7.13
5.34
4.01
3.01
2.25
1.69
1.27
0.85
0.00
Concentration (μM)

Fig.28.

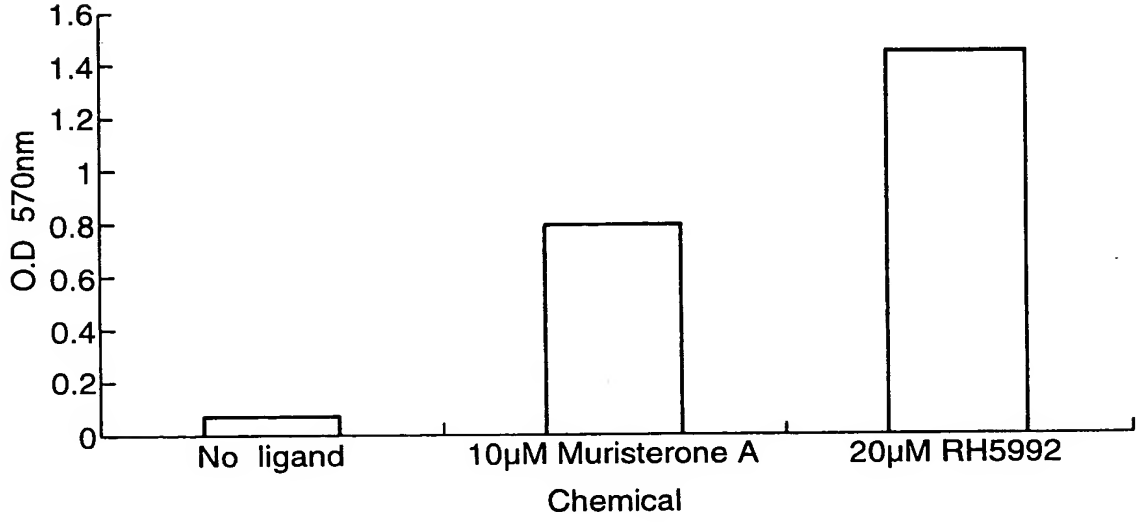
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
O.D 570nm
No ligand
10μM Muristerone A
20μM RH5992
Chemical

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Fig.29.

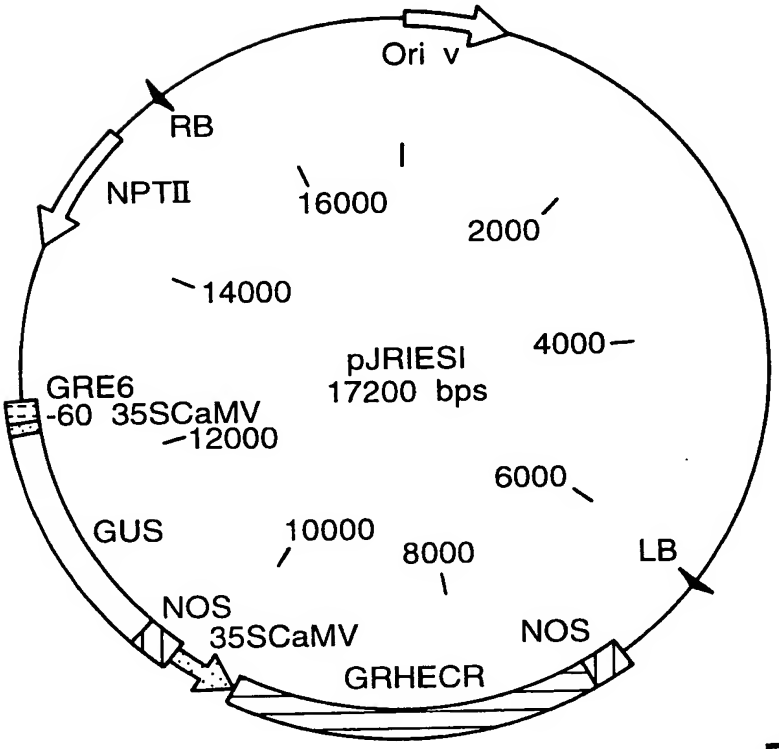

Fig.30.

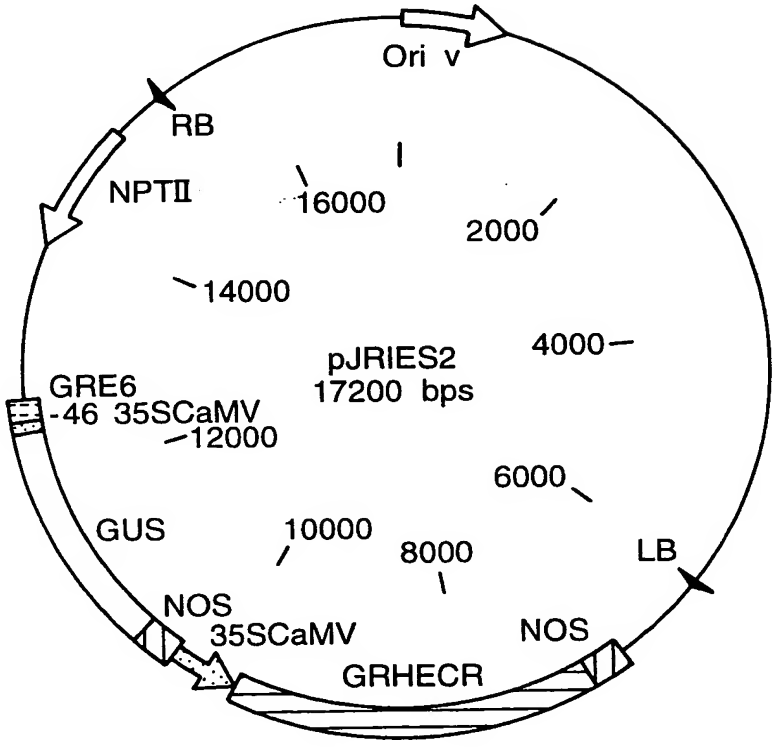

Fig.31.

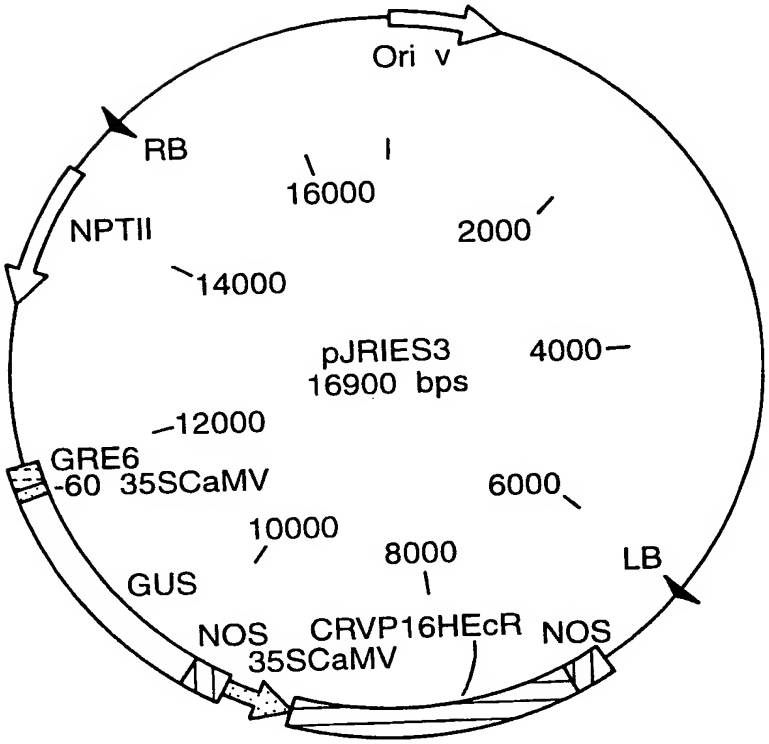
Ori v
RB
16000
NPTII
2000
14000
pJRIES3
16900 bps
4000
12000
GRE6
-60 35SCaMV
6000
10000
8000
LB
GUS
NOS
CRVP16HEcR
35SCaMV
NOS

Fig.32.

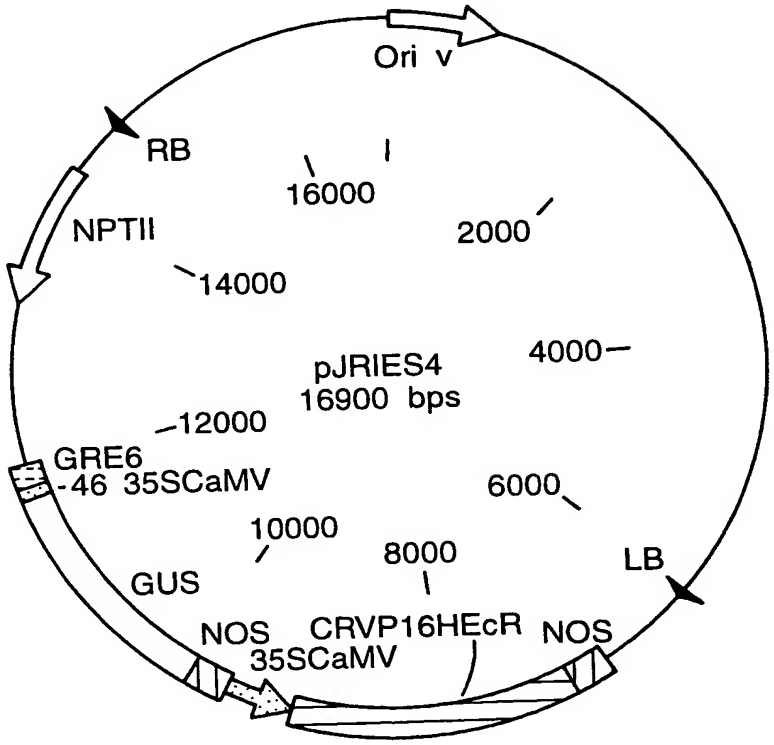
Ori v
RB
16000
NPTII
2000
14000
pJRIES4
16900 bps
4000
12000
GRE6
-46 35SCaMV
6000
10000
8000
LB
GUS
NOS
CRVP16HEcR
35SCaMV
NOS

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Fig.33.

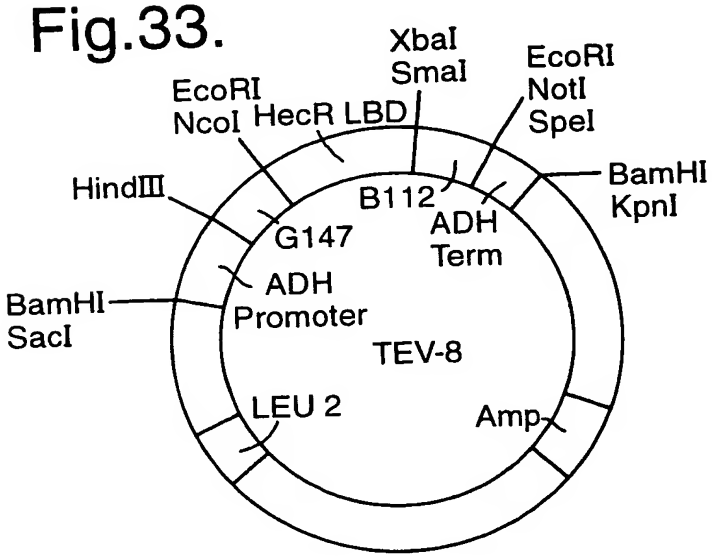


Fig.34.

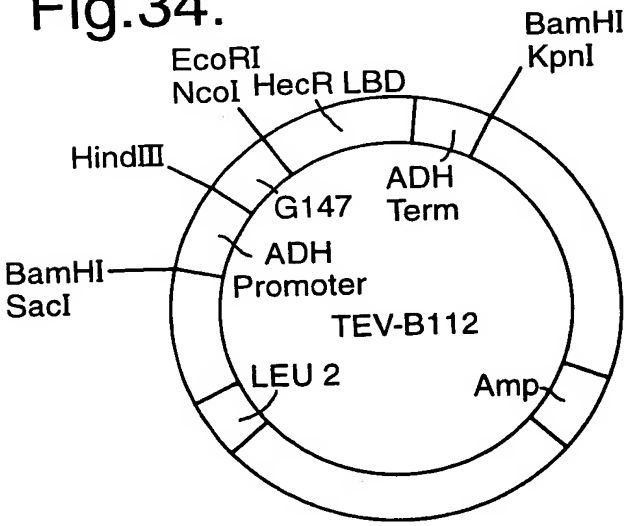


Fig.35.

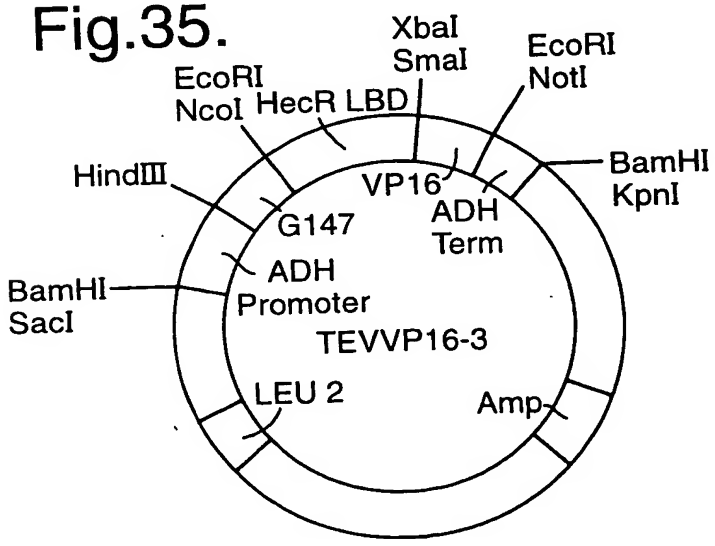


Fig.36.

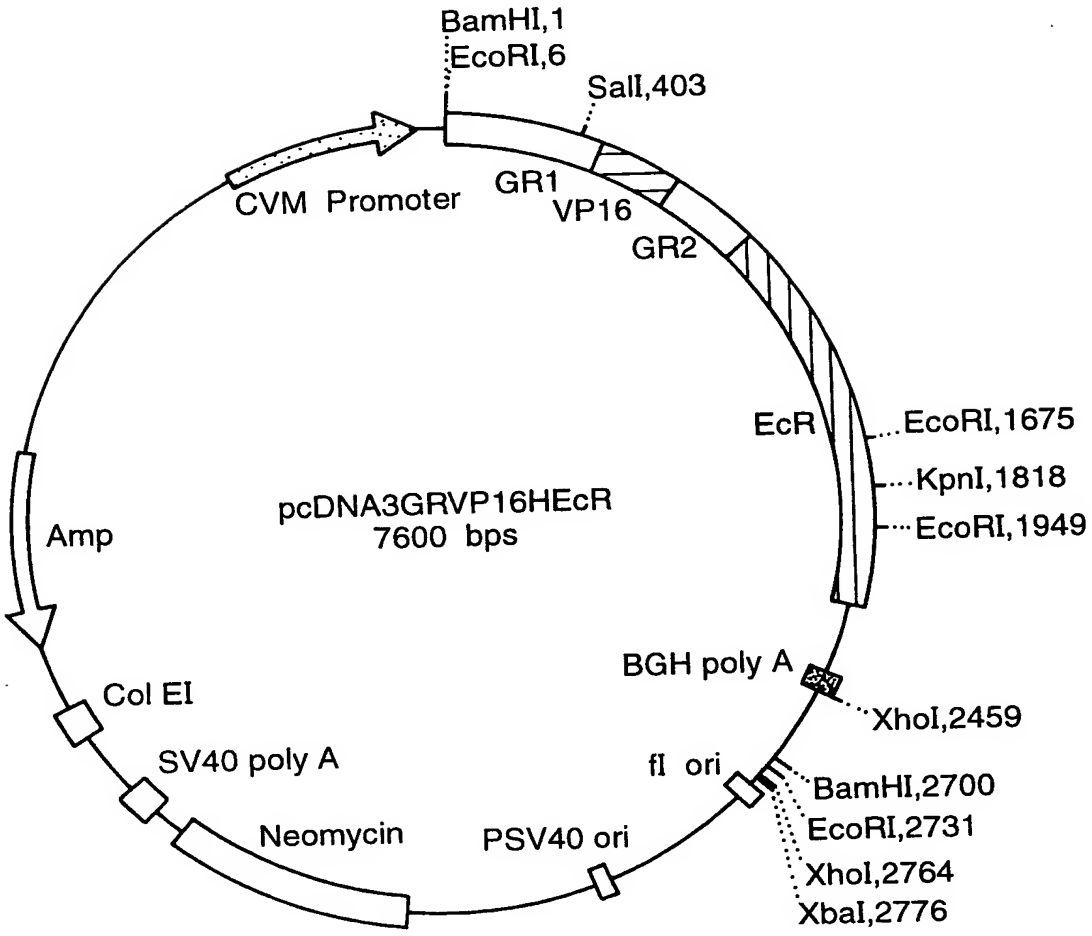

BamHI,1
EcoRI,6
SalI,403
GR1
VP16
GR2
CVM Promoter
EcR
EcoRI,1675
KpnI,1818
EcoRI,1949
pcDNA3GRVP16HEcR
7600 bps
Amp
BGH poly A
XhoI,2459
Col EI
SV40 poly A
fl ori
BamHI,2700
EcoRI,2731
XhoI,2764
XbaI,2776
Neomycin
PSV40 ori

Fig.37.

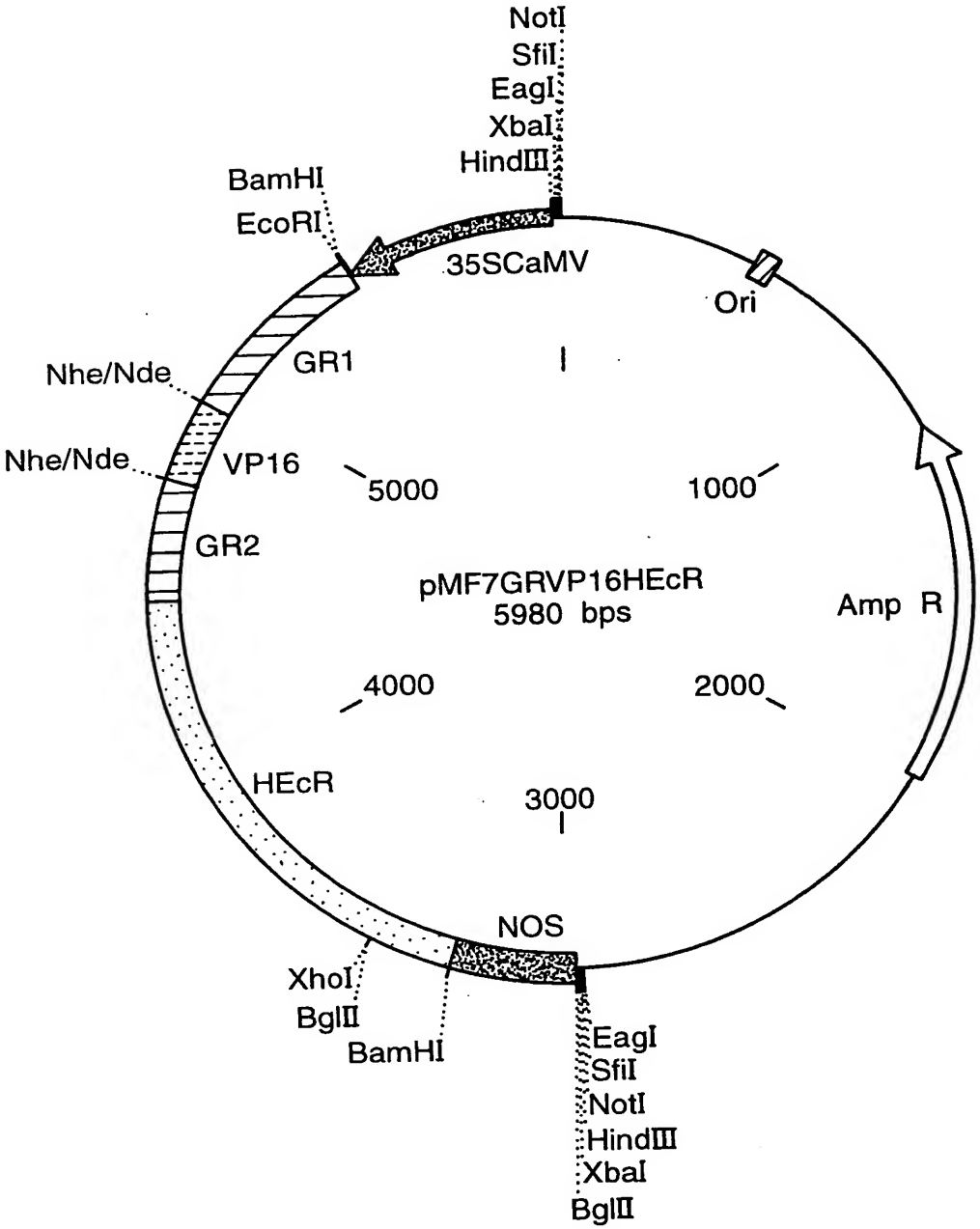
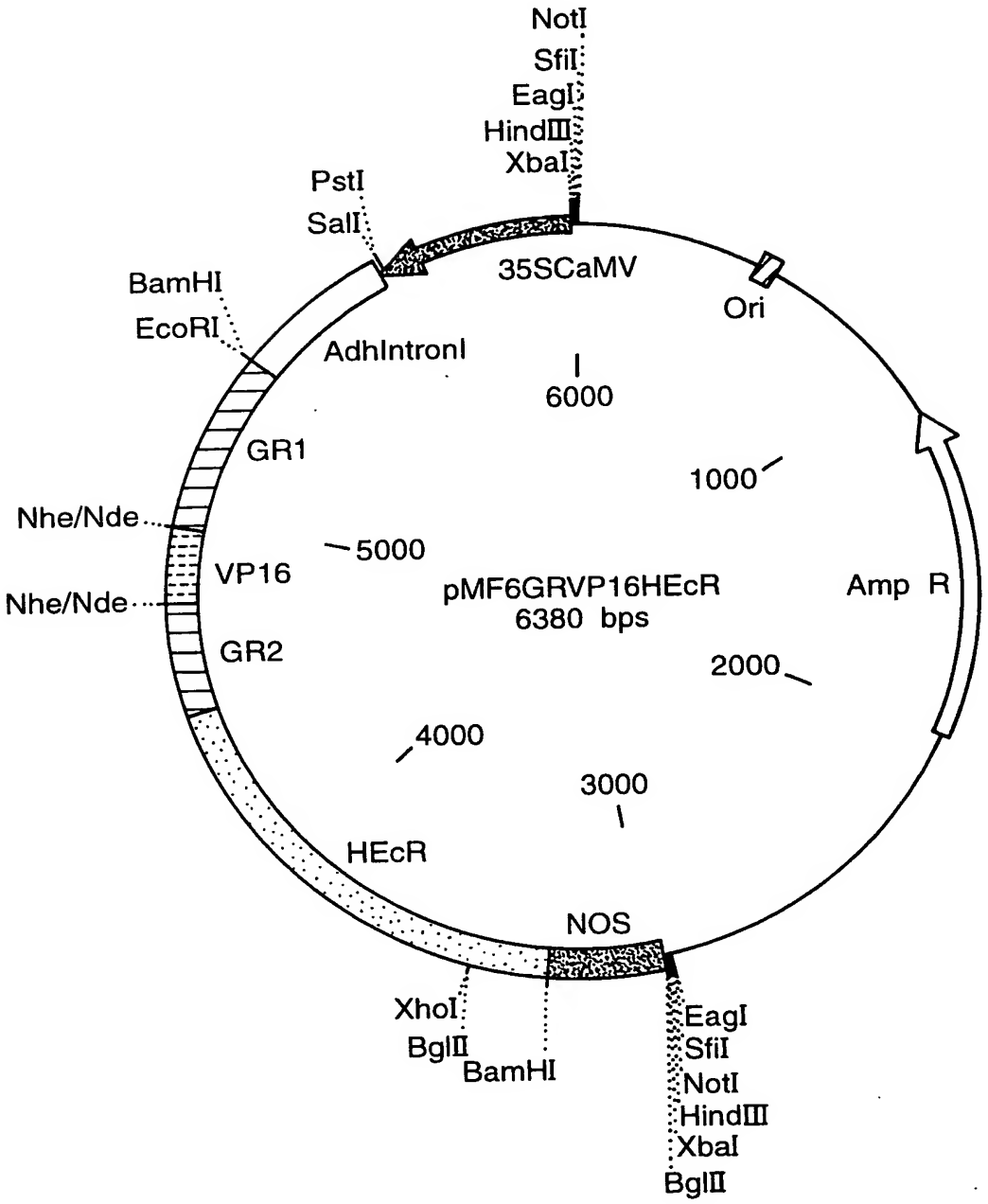

NotI
SfiI
EagI
XbaI
HindIII
BamHI
EcoRI
35SCaMV
Ori
GR1
Nhe/Nde
Nhe/Nde
VP16
GR2
5000
1000
pMF7GRVP16HEcR
5980 bps
Amp R
4000
2000
HEcR
3000
NOS
XhoI
BglII
BamHI
EagI
SfiI
NotI
HindIII
XbaI
BglII

Fig.38.


NotI
SfiI
EagI
HindIII
XbaI
PstI
SalI
BamHI
EcoRI
35SCaMV
Ori
AdhIntronI
6000
GR1
1000
Nhe/Nde
5000
VP16
Nhe/Nde
pMF6GRVP16HEcR
6380 bps
Amp R
GR2
2000
4000
3000
HEcR
NOS
XhoI
BglII
BamHI
EagI
SfiI
NotI
HindIII
XbaI
BglII

Title: METHOD FOR CONTROLLING
GENE EXPRESSION IN A CELL
Inventor: Jepson et al.
Atty Docket: 1392/4/3/2

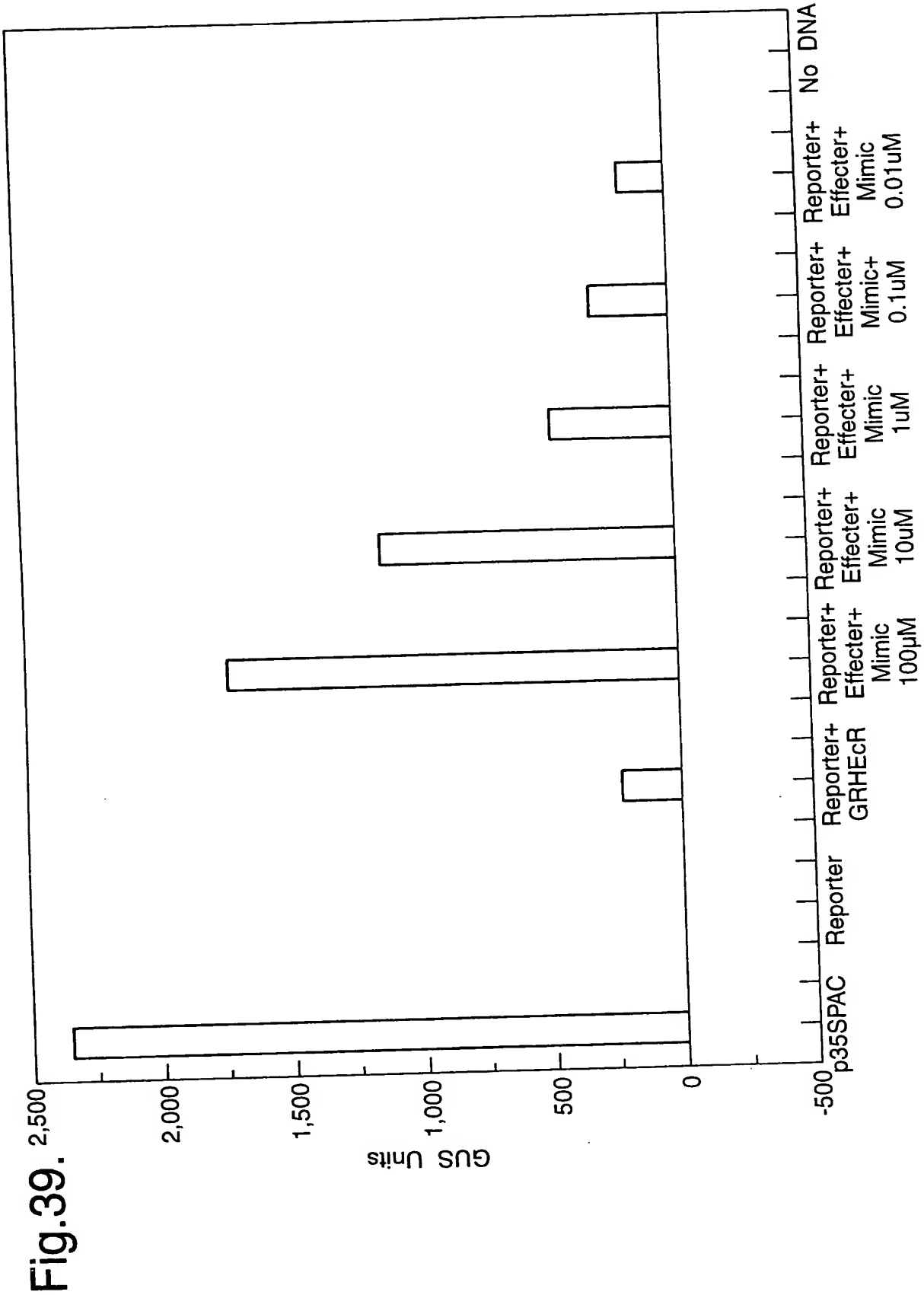


Fig.39.

Spodoptera exigua DNA sequence.

Fig.40.

Sequence ID 6

SPODOPTERA EXIGUA HINGE AND LIGAND BINDING DOMAINS

```
                3         9        15        21        27        33        39        45
                |         |        |         |         |         |         |         |
    1 AGG CCG GAG TGC GTG GTG CCA GAA AAC CAG TGT GCA ATG AAA AGG
      TCC GGC CTC ACG CAC CAC GGT CTT TTG GTC ACA CGT TAC TTT TCC

   46 AAA GAG AAA AAG GCA CAA AGG GAA AAA GAC AAG TTG CCA GTC AGT
      TTT CTC TTT TTC CGT GTT TCC CTT TTT CTG TTC AAC GGT CAG TCA

   91 ACA ACG ACA GTG GAT GAT CAC ATG CCT CCC ATT ATG CAG TGT GAT
      TGT TGC TGT CAC CTA CTA GTG TAC GGA GGG TAA TAC GTC ACA CTA

  136 CCA CCG CCT CCA GAG GCC GCA AGA ATT CAC GAG GTG GTG CCA CGA
      GGT GGC GGA GGT CTC CGG CGT TCT TAA GTG CTC CAC CAC GGT GCT

  181 TTC CTG AAT GAA AAG CTA ATG GAC AGG ACA AGG CTC AAG AAT GTG
      AAG GAC TTA CTT TTC GAT TAC CTG TCC TGT TCC GAG TTC TTA CAC

  226 CCC CCT CAC TGC CAA CCA GAA GTC CTT AAT AGC GAG GCT GGT CTG
      GGG GGA GTG ACG GTT GGT CTT CAG GAA TTA TCG CTC CGA CCA GAC

  271 GTA CCA AGA AGG CTA TGA ACA GCC ATC AGA AGA GGA TCT AAA AAG
      CAT GGT TCT TCC GAT ACT TGT CGG TAG TCT TCT CCT AGA TTT TTC
```

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Fig.40 i.

```
316 AGT CAC ACA GTC GGA TGA AGA CGA AGA AGA GTC GGA CAT GCC GTT
    TCA GTG TGT CAG CCT ACT TCT GCT TCT TCT CAG CCT GTA CGG CAA

361 CCG TCA GAT CAC CGA GAT GAC GAT CCT CAC AGT GCA GCT CAT TGT
    GGC AGT CTA GTG GCT CTA CTG CTA GGA GTG TCA CGT CGA GTA ACA

406 TGA ATT CGC TAA GGG CCT ACC AGC GTT CGC AAA GAT CTC ACA GTC
    ACT TAA GCG ATT CCC GGA TGG TCG CAA GCG TTT CTA GAG TGT CAG

451 GGA TCA GAT CAC ATT ATT AAA GGC CTG TTC GAG TGA GGT GAT GAT
    CCT AGT CTA GTG TAA TAA TTT CCG GAC AAG CTC ACT CCA CTA CTA

496 GTT GCG AGT AGC TCG GCG GTA CGA CGC GGC GAC AGA CAG CGT GTT
    CAA CGC TCA TCG AGC CGC CAT GCT GCG CCG CTG TCT GTC GCA CAA

541 GTT CGC CAA CAA CCA GGC GTA CAC CCG CGA CAA CTA CCG CAA GGC
    CAA GCG GTT GTT GGT CCG CAT GTG GGC GCT GTT GAT GGC GTT CCG

586 AGG CAT GGC CTA CGT CAT CGA GGA CCT GCT GCA CTT CTG CCG GTG
    TCC GTA CCG GAT GCA GTA GCT CCT GGA CGA CGT GAA GAC GGC CAC

631 CAT GTA CTC CAT GAT GAT GGA TAA CGT CCA CTA TGC ACT GCT CAC
    GTA CAT GAG GTA CTA CTA CCT ATT GCA GGT GAT ACG TGA CGA GTG

676 TGC CAT CGT CAT TTT CTC AGA CCG ACC CGG GCT TGA GCT AAC CCT
    ACG GTA GCA GTA AAA GAG TCT GGC TGG GCC CGA ACT CGA TTG GGA

721 GTT GGT GGA GGA GAT CCA GAG ATA TTA CCT GAA CAC GCT GCG GGT
    CAA CCA CCT CCT CTA GGT CTC TAT AAT GGA CTT GTG CGA CGC CCA
```

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Fig.40 ii.

```
766 GTA CAT CCT GAA CCA GAA CAG TCG GTC GCC GTG CTG CCC TGT CAT
    CAT GTA GGA CTT GGT CTT GTC AGC CAG CGG CAC GAC GGG ACA GTA

811 CTA CGC TAA GAT CCT CGG CAT CCT GAC GGA GCT GCG GAC CCT GGG
    GAT GCG ATT CTA GGA GCC GTA GGA CTG CCT CGA CGC CTG GGA CCC

856 CAT GCA GAA CTC CAA CAT GTG CAT CTC ACT CAA GCT GAA GAA CAG
    GTA CGT CTT GAG GTT GTA CAC GTA GAG TGA GTT CGA CTT CTT GTC

901 GAA CGT GCC GCC GTT CTT CGA GGA TAT CTG GGA CGT CCT CGA GTA
    CTT GCA CGG CGG CAA GAA GCT CCT ATA GAC CCT GCA GGA GCT CAT

946 AAA
    TTT
```

Total number of bases is: 948.

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Fig.41.

Sequence I.D. 7

Sequence comparison between Heliothis 19R clone and SEcR Taq clone

```
HEcR  RPECVVPENQCAMKRKEKKAQREKDKLPVSTTTVDDHMPPIMQCDPPPPEAARILECVQ
SEcR  RPECVVPENQCAMKRKEKKAQREKDKLPVSTTTVDDHMPPIMQCDPPPPEAARI

HEcR  HEVVPRFLNEKLMEQNRLKNVPPLTANQKSLIARLVWYQEGYEQPSEEDLKRVTQSD
SEcR  HEVVPRFLNEKLMERTRLRNVPPLTANQKSLIARLVWYQEGYEQPSEEDLKRVTQSD

HEcR  EDDEDSDMPFRQITEMTILTVQLIVEFAKGLPGFAKISQSDQITLLKACSSEVMMLR
SEcR  EDEEESDMPFRQITEMTILTVQLIVEFAKGLPAFAKISQSDQITLLKACSSEVMMLR

HEcR  VARRYDAATDSVLFANNQAYTRDNYRKAGMAYVIEDLLHFCRCMYSMMMDNVHYALL
SEcR  VARRYDAATDSVLFANNQAYTRDNYRKAGMAYVIEDLLHFCRCMYSMMMDNVHYALL

HEcR  TAIVIFSDRPGLEQPLLVEEIQRYYLNTLRVYILNQNSASPRGAVIFGEILGILTEI
SEcR  TAIVIFSDRPGLELTLLVEEIQRYYLNTLRVYILNQNSRSPCCPVIYAKILGILTEL

HEcR  RTLGMQNSNMCISLKLKKRKLPPFLEEIDWDV
SEcR  RTLGMQNSNMCISLKLKNRNVPPFFEDIDWDV
```

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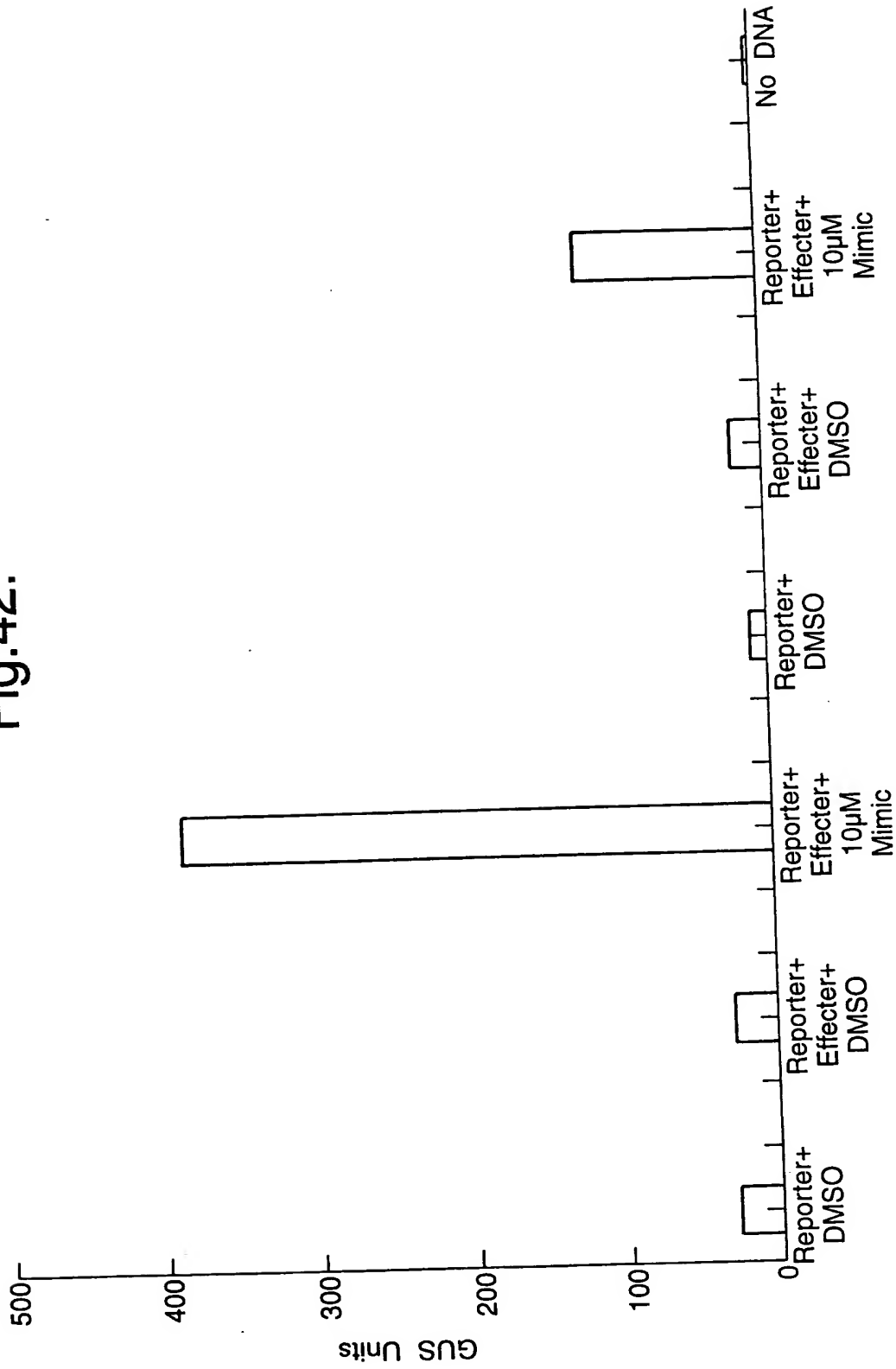
Fig.42.